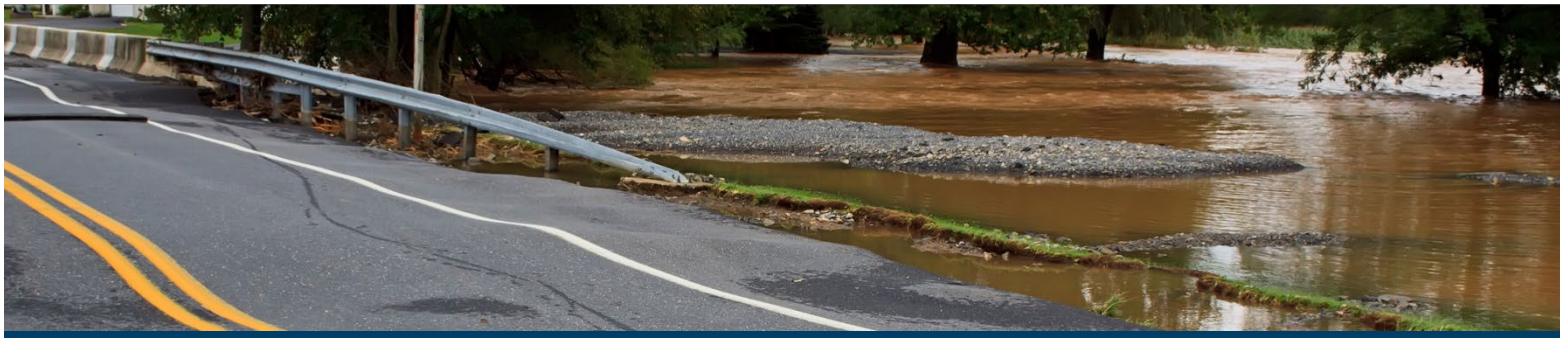

Local Mitigation Planning Handbook

May 2023

FEMA

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Introduction

Mitigation planning provides a framework local governments can build on to lessen the impacts of natural disasters. By encouraging whole-community involvement, assessing risk and using a range of resources, local governments can reduce risk to people, economies and natural environments. This Local Mitigation Planning Handbook (Handbook) guides local governments, including special districts, as they develop or update a hazard mitigation plan. The Handbook will:

- Help local governments meet the requirements in the Local Mitigation Planning Policy Guide (the Guide) and Title 44 of the Code of Federal Regulations (CFR) for FEMA approval. An approved, adopted mitigation plan is a gateway to apply for FEMA Hazard Mitigation Assistance (HMA) and High Hazard Potential Dam (HHPD) grant programs.

- Provide useful ideas and approaches that aid communities in reducing vulnerabilities and long-term risk from natural hazards and disasters through planning.

The Handbook is a companion to the Guide. The Guide helps local governments understand the requirements in the CFR. It also assists state and federal officials who provide training and technical assistance to local governments during their review and approval of local plans. The Handbook, on the other hand, gives advice and approaches for developing these plans.

Key Terms

Hazard Mitigation is any sustained action taken to reduce or eliminate long-term risk to life and property from hazards.

Mitigation Planning is a community-driven process to help state, local, tribal and territorial (SLTT) governments plan for hazard risk. By planning for risk and setting a strategy for action, governments can reduce the negative impacts of future disasters.

Community Resilience is a community's ability to prepare for anticipated hazards, adapt to changing conditions, and withstand and recover rapidly from disruptions. Activities such as disaster preparedness (which includes prevention, protection, mitigation, response and recovery) and reducing community stressors (the underlying social, economic and environmental conditions that can weaken a community) are key steps to resilience.

Community Lifelines are the most fundamental services in the community that, when stabilized, enable all other aspects of society to function. The integrated network of assets, services and capabilities that make up community lifelines are used day to day to support recurring needs. Lifelines enable the continuous operation of critical government and business functions and are essential to human health and safety or economic security, as described in the National Response Framework, 4th Edition (October 28, 2019).

Handbook Format and Organization

The mitigation planning process is slightly different for each SLTT government. However, no matter the plan type, there are four core steps in completing a hazard mitigation plan or plan update. Within each step there are tasks which, taken together, help to build a hazard mitigation plan.

This handbook is organized around the four steps and nine recommended tasks for developing a local hazard mitigation plan (Figure 1). Some tasks can be completed at the same time. Others depend on completing earlier tasks. Tasks 1 through 3 set up the process and people needed to complete the remaining tasks. They also advise on the best ways to document the planning process. Tasks 4 through 8 explain the specific analyses and decisions that need to be completed and recorded in the plan. Task 9 provides resources for carrying out your plan.

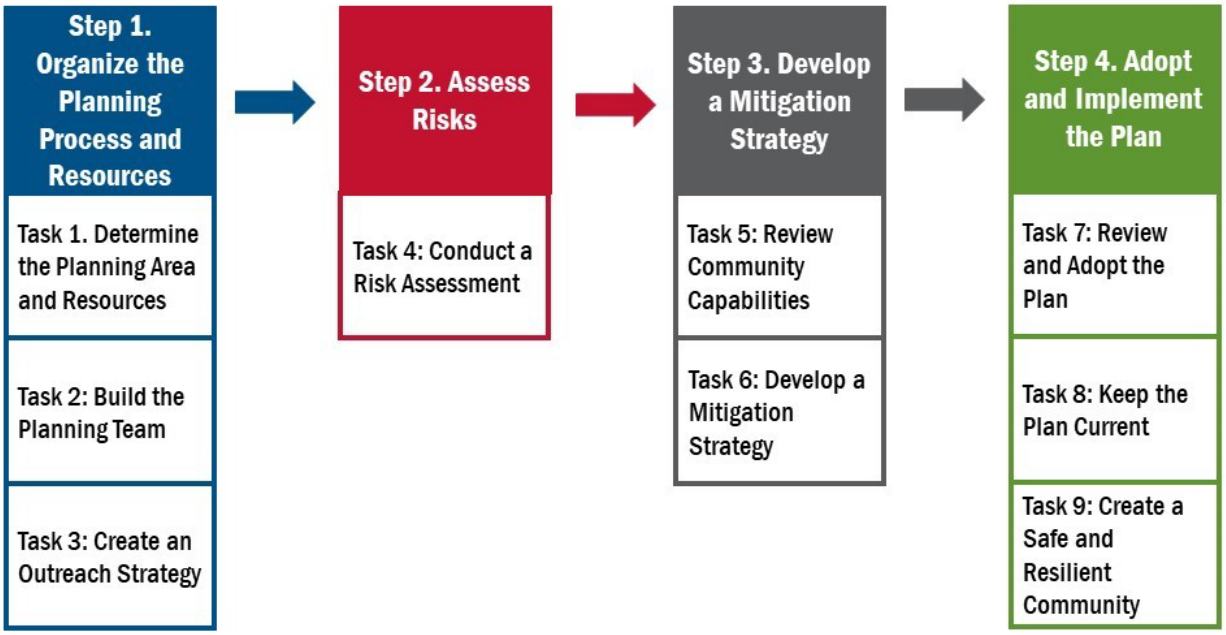


Figure 1: Local Mitigation Planning - Steps and Tasks.

In addition to its narrative, this Handbook uses three kinds of callout boxes to explain core concepts, provide examples, and share resources.

Blue Callout Boxes: Context and Extra Help

Blue callout boxes provide extra information that augments the narrative of each task. These boxes include tips and tricks, spotlights and insights for the reader.

Green Callout Boxes: Policy Connections

Green callout boxes highlight connections between the Handbook and the Guide. Each green box appears at the end of a section related to a specific element of the Guide. For example, Task 3, Create an Outreach Strategy, helps a plan meet Element A1 in the Guide.

Gray boxes: Case Studies

Grey callout boxes present case studies. These case studies provide examples of how an idea or component has been carried out in the real world by local communities.

The Handbook also includes the following annexes:

- Annex A: Resources for Resilience
- Annex B: Worksheets, Samples and Starter Kits
- Annex C: Local Mitigation Plan Review Tool

Mitigation and the Emergency Management Cycle

Hazard mitigation is the cornerstone of emergency management. It is the ongoing effort to lessen the impact that disasters can have on people and property. Without mitigation, the same people, property and community lifelines are affected over and over again.

The emergency management cycle generally has four phases:

- **Preparedness** is when we develop or update activities, programs and systems before an event happens. These activities are often tested (or exercised) in non-emergency situations. This tests their effectiveness. Emergency managers also assess potential risks, hazards and vulnerabilities in this phase.
- **Response** focuses on the immediate and short-term effects of a disaster. It is usually focused on life safety and preventing immediate damage.
- **Recovery** is a long-term phase that looks to return a community to normal, or to a more resilient state, after a disaster.
- **Mitigation** focuses on building (or rebuilding) in ways that reduce the risk more permanently. It is an activity that can occur at any point in the emergency management cycle. For example, communities can undertake mitigation actions before a disaster (the preparedness phase) or while rebuilding after a disaster (the recovery phase).

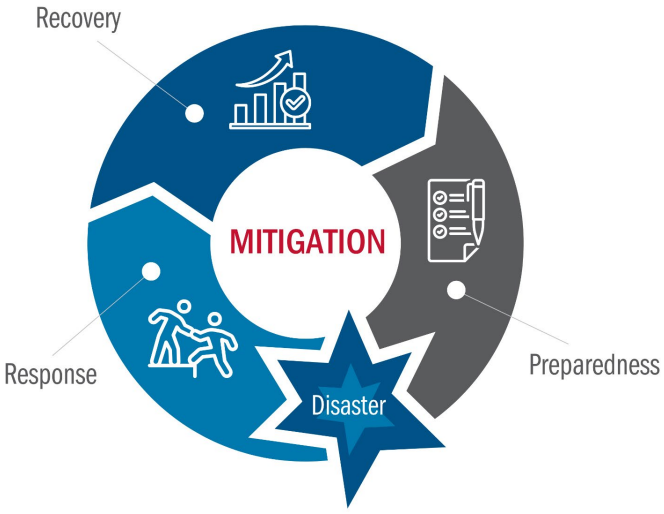


Figure 2: The emergency management cycle.

A core responsibility of local governments is to protect health, safety and public welfare. Investing in mitigation supports this responsibility. According to the National Institute of Building Sciences' Natural Hazard Mitigation Saves 2019 report, every $1 in federal grants invested in mitigation can save up to $6. Mitigation can:

- Protect public safety and prevent loss of life and injury.
- Build resilience to current and future disaster risks.
- Prevent damage to a community's economic, cultural and environmental assets.
- Reduce operational downtime and speed up the recovery of government and business after disasters.
- Reduce the costs of disaster response and recovery, as well as the exposure to risk for first responders.
- Help achieve other community goals, such as protecting infrastructure, preserving open space and boosting economic resilience.

Mitigation Builds Climate Resilience

Disasters can cause loss of life, damage buildings and infrastructure, and have devastating effects on a community's economic, social and environmental well-being. Climate change is increasing the number and intensity of disasters overall and, in many communities, is changing the landscape of risk. These trends make mitigation even more important. By taking future climate change into account and proactively reducing risk, communities increase their chance of withstanding future events.

Natural and climate disaster risk information that is accurate, comprehensive, and produced or endorsed by an authoritative source can help decision makers better assess their community's risk. Across the United States, communities are working to build resilience to hazards such as extreme heat, drought, flooding and wildfires. Adaptation to climate change also creates resilience.

The mitigation plan provides a ready-made opportunity for communities to account for climate change and climate risks in their planning. The plan's risk assessment must include the probability of future hazard events. At its most basic, probability is the likelihood of a hazard happening. The probability description must discuss any hazard characteristics that may change, such as location, extent, duration and/or frequency. The mitigation strategy is a chance to identify, evaluate and carry out actions that will reduce future climate change-related risks. The mitigation plan also can and should be integrated with other community climate resilience activities, like a climate adaptation plan or a greenhouse gas reduction strategy.

Climate Change Terminology

Climate is the usual weather of a place. Climate can be different for different seasons. A place might be mostly warm and dry in the summer but be cool and wet in the winter.

Climate Change refers to "changes in average weather conditions that persist over multiple decades or longer. Climate change encompasses both increases and decreases in temperature, as well as shifts in precipitation, changing risk of certain types of severe weather events, and changes to other features of the climate system."

Climate Adaptation refers to adapting to life in a changing climate. It involves adjusting to actual or expected future climate. The goal is to reduce risks from the harmful effects of climate change (like sea-level rise, more intense extreme weather events, or food insecurity). It also includes making the most of any potential beneficial opportunities associated with climate change (for example, longer growing seasons or increased crop yields in some regions).

Climate Mitigation involves reducing the flow of heat-trapping greenhouse gases into the atmosphere, either by reducing the sources of these gases (for example, the burning of fossil fuels for electricity, heat or transport) or enhancing the "sinks" that accumulate and store these gases (such as the oceans, forests and soil). The goal of climate mitigation is to avoid significant human interference with Earth's climate. *Note: when climate experts use the term "mitigation," they are referring to reducing greenhouse gas emissions. In a hazards context, "mitigation" refers to reducing disaster losses.*

Climate Resilience is the ability to anticipate, prepare for, and respond to hazardous events, trends or disturbances related to climate. Improving climate resilience involves assessing how climate change will create new, or alter current, climate-related risks, and taking steps to better cope with these risks.

Mitigation Planning is Risk-Informed Decision Making

Mitigation works best when it is based on a long-term plan that is developed before a disaster. By assessing risk and vulnerability to hazards, mitigation planning identifies long-term local policies and actions that communities can take to increase resilience. Effective planning also weighs input from a wide range of stakeholders and the public. Mitigation planning:

- Encourages community leaders to choose actions to reduce risk that stakeholders and the public will support.
- Focuses resources on the greatest risks and vulnerabilities, including where they are needed the most, i.e. areas and populations disproportionately affected by disasters.
- Builds partnerships with diverse stakeholders. This deepens the pool of data and resources, which can help reduce workloads and achieve shared community objectives.
- Boosts awareness of threats and hazards, including their risks and the community's vulnerability to those risks.
- Aligns risk reduction with other community goals and programs like capital improvements.
- Supports socially vulnerable populations and underserved communities in achieving resilience.

Legislative and Strategic Basis for Mitigation Planning

The legislative authority that provides the legal authority for mitigation is derived from the Stafford Act, as amended by the Disaster Mitigation Act of 2000. Section 322 of the Stafford Act specifically addresses mitigation planning. This establishes the requirement that state and local governments prepare hazard mitigation plans as a precondition for receiving FEMA mitigation project grants.

FEMA's 2022-26 Strategic Plan identifies empowering risk-informed decision making as a key objective for building a climate resilient nation. The mitigation planning process involves all of the critical components of understanding current and future risks, forming partnerships and identifying the most appropriate actions to build climate resilience.

Planning is the Foundation for Mitigation Investments

Local mitigation plans are investment strategies that communities create through the planning process. Plans are used to identify hazards, assess risks and vulnerabilities, and develop strategies. The planning process is community-based and risk-informed. It closely aligns with the principles laid out by the Comprehensive Preparedness Guide 101. The process shows the whole community why it

should mitigate. It also helps communities develop actions based on their current and future risks and capabilities.

Guiding Principles

The mitigation plan belongs to the local community. While FEMA has the authority to approve plans so local governments can apply for mitigation project funding, there is no required format for the plans. FEMA reviews what is in the plan, not how it is organized. When developing the mitigation plan, keep the following principles from the Guide in mind.

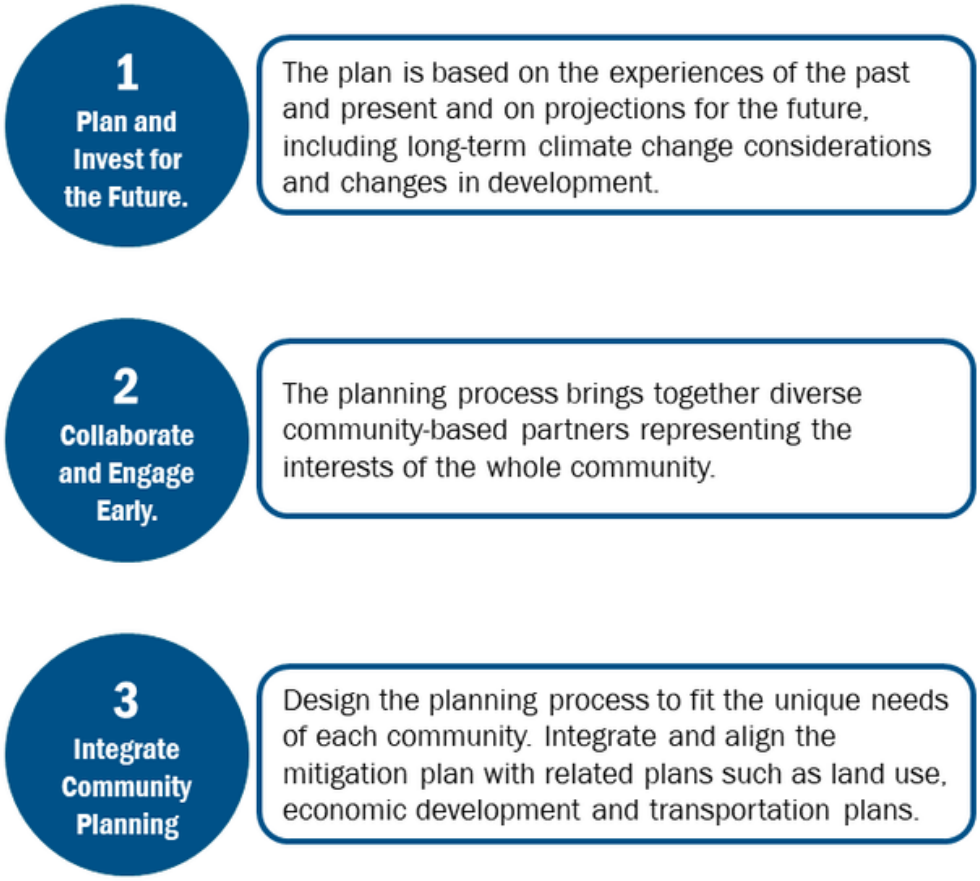


Figure 3: Guiding principles for local mitigation plans.

Task 1. Determine the Planning Area, Process and Resources

1.1. Initial Considerations

1.1.1. New Plan or Plan Update

Once you decide to create a hazard mitigation plan, it's time to set up the planning process. The foundation of all mitigation plans is an inclusive, well-documented planning process with community buy-in. A successful process brings diverse partners together. They will discuss your community's experience with natural hazards and how to meet your risk reduction needs.

The first question that needs to be answered when developing a mitigation plan is: Are you updating a plan or creating a new one? There are instances where participants in a multi-jurisdictional plan decide to create their own plan, resulting in a "new" plan. Additionally, single jurisdictions may see the value of participating in an existing regional plan that is being updated. All local situations are unique and deciding on the type of plan to develop will depend on the needs of the local community.

1.1.2. Confirm Participant(s) and Planning Area

Plans can be single- or multi-jurisdictional. Multi-jurisdictional plans require all participants to meet certain requirements to adopt. Multi-jurisdictional plans may include local and tribal governments, and special districts.

Communities may choose to develop their own plan or work with other communities. No matter the configuration, all participants must meet the mitigation planning requirements.

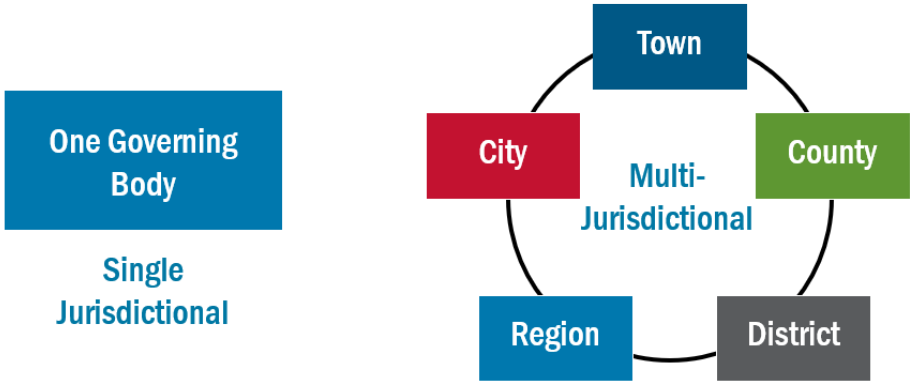


Figure 4: Single-jurisdictional plans have only one governing body. Multi-jurisdictional plans cover many local governments in one plan.

Both single- and multi-jurisdictional plans have benefits and challenges. Single-jurisdiction plans offer independence in how the community will design and conduct its planning process. This type of plan can be suitable for any community, large or small.

Jurisdiction, Community and Participants

The Guide and the Handbook use the terms “jurisdiction,” “community” and “participant” interchangeably. These terms refer to any local government developing or updating a local mitigation plan. 44 CFR § 201.2 defines "local government" as “any county, municipality, city, town, township, public authority, school district, special district, intrastate district, council of governments (regardless of whether the council of governments is incorporated as a nonprofit corporation under state law), regional or interstate government entity, or agency or instrumentality of a local government; any Indian tribe or authorized tribal organization, or Alaska Native village or organization; and any rural community, unincorporated town or village, or other public entity.”

In some cases, a participant’s service area or footprint may cross political boundaries. Examples of this include a fire protection district or a utility district.

Multi-jurisdictional plans have certain requirements that help to make sure each community goes through its own local planning process, in addition to the overall group effort. The group planning process will be led by the coordinating entity, referred to as the plan owner, and will include representatives from each jurisdiction. The plan owner takes the lead for coordinating across all participants and with the state and FEMA. Each jurisdiction will take the information shared at group meetings, pass the information on, and collect information through their own local planning process. Each participant must assess their unique risk to identified hazards and identify their own capabilities to reduce those risks. Each must develop their own actions to reduce the risks specific to their community.

Table 1: Benefits and Challenges of Multi-Jurisdictional Plans

Benefits of a Multi-Jurisdictional Plan	Challenges of a Multi-Jurisdictional Plan
▪ Improves communication and coordination. ▪ Enables comprehensive and regional mitigation approaches. ▪ Maximizes economies of scale by sharing costs and capabilities. ▪ Avoids duplication of effort. ▪ Provides organizational structure. ▪ Broader chances for participation.	▪ Reduces individual control over the process. ▪ Involves coordination and administration to track multiple independent local governments, especially when it comes time for each local government to adopt the plan. ▪ Requires organizing large amounts of information, including individualized mitigation strategies, into a single document.

If you find that a multi-jurisdictional planning effort is the best option for your community, then decide if it is best to join an existing planning effort or take the lead on initiating a multi-jurisdictional plan. Plan owners for multi-jurisdictional plans typically include counties, rural or metropolitan planning organizations and planning districts. Multi-jurisdictional planning works best when jurisdictions:

- Share boundaries and have economic ties (workplaces and workforce housing, transportation, critical infrastructure, etc.).
- Face similar threats or hazards.
- Work under the same authorities.
- Have similar needs and capabilities.
- Have worked well together in the past.

You will need to partner with neighboring jurisdictions that could be Tribal governments and/or quasi-governmental agencies. These may include special districts that own and operate critical infrastructure or that would like to apply for FEMA mitigation project grants. Special districts have an interest in reducing threats and hazard impacts as many serve customers across multiple jurisdictions. This is especially true if they provide services that are vital to recovery efforts.

Tribal Governments in Multi-Jurisdictional Plans

A federally recognized tribal government may also choose to participate in a multi-jurisdictional plan. However, the Tribe must meet the requirements specified in 44 CFR §201.7, Tribal Mitigation Planning, which are slightly different from the local planning requirements. Tribal and local governments that are not federally recognized must meet the local mitigation planning requirements specified in 44 CFR §201.6.

Indian Tribal government means any federally recognized governing body of an Indian or Alaska Native Tribe, band, nation, pueblo, village or community that the Secretary of the Interior acknowledges to exist as an Indian Tribe under the Federally Recognized Indian Tribe List Act of 1994, 25 U.S.C. 479a. This does not include Alaska Native corporations, the ownership of which is vested in private individuals.

The planning area refers to the geographic area the plan covers. Generally, the planning area follows jurisdictional boundaries. These can include cities, townships, counties and planning districts. However, watersheds or other natural features may also define planning areas. Communities may choose this approach when hazards create similar risks across jurisdictional boundaries.

The State Hazard Mitigation Officer (SHMO) or state emergency management agency can help communities determine the appropriate planning area, too. State planning goals and funding

priorities may guide this decision. Keep in mind that the scale of the planning area should be meaningful to participants to form an enduring resilience framework. For example, consider aligning with established regional planning or economic development districts to leverage their planning expertise.

After identifying the planning area and participating jurisdictions, it helps to get a written commitment from all participants. Ask the jurisdictions to sign a Voluntary Participation Agreement (VPA) at the start of the planning process. The VPA should outline requirements for each participating jurisdiction. You can find a sample VPA for a multi-jurisdictional planning team in Annex B.

1.1.3. Review Previous Plan and Scope Update

If you are updating your mitigation plan, read your community's previously approved plan and the Plan Review Tool (PRT). The plan is a baseline for understanding and updating hazards, risks and community profiles. It can help you identify opportunities for improvement. Reading the previously approved plan can also aid in identifying areas that may need more time and resources.

If you have a previously approved plan, FEMA completed Section 2 of the PRT during their review process. It notes plan strengths and identifies opportunities for improvement. Let this guide your priority areas for the plan update. Incorporating FEMA's feedback can help you improve each subsequent version of a plan.

Considerations for Plan Updates

Element E of the Guide lists specific requirements for plan updates. These requirements ask communities to think about how circumstances have changed since their previous plan was adopted. You can use these questions and considerations throughout your plan maintenance cycle. However, they are especially crucial for the formal 5-year update.

1.2. Right-Sizing the Scope of the Planning Process

When developing a plan, it is crucial to make some key decisions about the plan's focus and what it will achieve, given the time and resources available. Not every planning process needs the same level of effort to get to an approved plan. This is called right-sizing the plan. Develop a scope of work (SOW) to outline what your planning process needs to accomplish to get to an approved mitigation plan. An SOW is part of a FEMA mitigation planning grant application, but it can also be useful even if you develop the plan without FEMA funding.

1.2.1. Preliminary Questions

When developing your SOW, use the questions in Table 2 to determine your needs. These questions can help you match the plan development's complexity to the cost and overall level of effort.

Table 2: Preliminary Considerations

Consideration Type	Key Questions
Plan Configuration	▪ Is this a new plan or a plan update? ○ What can be updated simply with information from the last 5 years? What requires significant rewriting? ○ Are there additional data that you need to gather and include? ▪ How many communities will participate and are there sufficient resources for coordination? ▪ How many agencies and partners need to participate to bring resources and ideas to the table? Are there sufficient resources for coordination?
Participant Priorities	▪ What do participants want to address? ○ What hazards are of most concern? ○ What are the problem areas in the community or region?
Overall Timeline	▪ Is there a tight turnaround for having an approved mitigation plan, such as an upcoming grant deadline, or is there some additional time?
Needed Support	▪ Can this be done in-house with existing personnel? ▪ Can a local college or university assist with the planning process or data analysis? ▪ Is the level of expertise needed outside of the community's skillset? ▪ Will you need contractor support?
Cost	▪ How much will the process (plan development or update) cost, considering costs all the way through plan adoption and approval by FEMA? ○ Do you need to apply for funding? ○ What federal and state programs exist that can help pay for the plan's development?

1.2.2. Schedule Considerations

Preparing a mitigation plan takes time. Consider a timeline of at least 18 months for taking a plan from initiation through approval. With an 18-month timeline, it is important to be clear about the overall level of effort up front with all participants. Start with forming an SOW that is right-sized for the needed planning effort and can accommodate all participants, including underserved communities and socially vulnerable populations. Get signed VPAs from all participating jurisdictions who plan to engage with and adopt the final plan.

It is also important to account for the parts of the process that add time, such as:

- Finding and pursuing funding and/or in-kind support for the planning process and resulting documents.
- Finding and hiring a contractor, if needed, and following all applicable procurement rules and processes.
- State and FEMA review. Budget at least 6 months for this. Your review may not take this long, but it is better to plan for a longer review period to avoid your plan expiring.
- Adoption and FEMA approval. Coordination and correspondence around adoption and approval can also add time to your schedule.

Mitigation plans are approved for a period of 5 years. To keep grant eligibility, the plan must be updated and approved every five years. When scoping a plan update, develop the SOW and pursue funding no later than the third year of the plan's approval period. It can take up to 12 months to secure funding. This means that pursuing funding in the third year will allow plenty of time to get to an approved plan. These general timelines also apply to new plans. Pursue grant funding 3 years before you want to have an approved plan. Remember it may take at least 18 months to develop a plan.

Mitigation plans can be developed in a multitude of ways. Whether funding a contractor to help complete the work, or a commitment of time and resources, there is a cost to mitigation planning. Communities may choose to develop plans themselves, relying on local funds, time, and effort. Other communities may lack the necessary skillsets to develop a plan themselves. In those cases, FEMA HMA programs can provide funding to develop a mitigation plan. Coordinating with the SHMO can help clarify which path might work best for a particular participant.

For more information on scoping considerations, watch FEMA's Starting Your Mitigation Story with Scoping your Mitigation Plan training and review the Considerations for Local Mitigation Planning Grant Subapplications Job Aid.

1.3. Organizing Resources

After you have determined your planning area, outlined the SOW, and made crucial planning process decisions, it is time to organize your resources to support the planning process. Resources can be your partners, data resources, plans and studies, and technical assistance.

1.3.1. People and Partnerships

The planning process is powered by staff, stakeholders and volunteers from across the private, public and non-governmental sectors. Many partnership options can exist within a planning area. These options can be based on current planning projects, relationships and partnerships. Think

about whether your community works with regional organizations, councils of government, or other established multi-jurisdictional partnerships for planning activities.

Creating a mitigation plan does not require formal training in community planning, engineering or science. However, you should include subject matter experts in the planning process. Consider how personnel or contractors can help with:

- Identifying hazards, assessing vulnerabilities, and understanding significant risks.
- Facilitating meetings, involving partners and the public, and decision-making activities.
- Forming an organized and functional plan with maps or other graphics.

You have many options when considering outside help for plan development. You could contract with a regional planning agency, local college or state university. You may also want to reach out to another community that has already finished the planning process for advice. Before getting outside help from any of these sources, consider:

- The SOW, including administration, coordination and engagement.
- The expertise, type and extent of help needed.
- The level of interaction between support services, other members of the planning team, partners and the public.

Private consultants are another resource. They can help you coordinate, manage and carry out the mitigation planning process. Consultants can support facilitation, administration and documentation of the planning process. All information should be provided by and approved by each participant. If your community decides to hire a consultant, consider looking for a professional planning firm. Any support services for the planning process should:

- Recognize the unique demographic, geographic, technical and political considerations of each participating community.
- Show knowledge or experience with land use and community development.
- Know all the policies and regulations that apply to the mitigation plan. This should include federal law, FEMA regulations and policies, state laws and local ordinances.
- Know that community input and public participation are key to any successful mitigation plan.
- Have demonstrable mitigation planning experience working with underserved communities and socially vulnerable populations.
- Show familiarity with emergency management and multi-hazard mitigation, climate adaptation and resilience concepts.

- Share past performance information and references

For more information on engaging the right people and partners in the planning process, see Task 2: Build the Planning Team.

1.3.2. Plans, Studies and Data

Plans, studies and data are important inputs for the planning process. The plan must document the current technical information, plans, reports and studies used in the plan. Incorporating these resources makes sure you build off of the latest research and data, which leads to a stronger, more comprehensive mitigation plan. Carefully review related documents and data. If something can help you assess your risks, vulnerabilities and capabilities or set a strategy, include it in the plan.

Policy Connection: Element A4

Does the plan describe the review and incorporation of existing plans, studies, reports and technical information?

1.3.2.1 INCORPORATING OTHER PLANNING MECHANISMS

Hazard mitigation planning, and community planning in general, does not happen in a vacuum. The mitigation plan should support and be supported by other local plans and policies. This can ensure the success of mitigation actions. It can also bolster the effectiveness of other planning mechanisms in working toward resilience. Take the time to gather these plans and policies and see how they may tie in to risk reduction.

Table 3: Planning Mechanisms that Support the Mitigation Plan

Planning Mechanism	What it Supports	What to Look For
Climate Action or Adaptation Plan	Risk Assessment Mitigation Strategy	Detailed climate projections; descriptions of climate risks; existing climate-related goals and actions
Comprehensive, General, or Master Plan	Risk Assessment Capability Assessment	Information on hazards, development trends, goals and policies, land use plans, and other ordinances that support risk reduction
Emergency Operations Plan	Risk Assessment Capability Assessment	Data on hazards or events of concern and vulnerabilities

Planning Mechanism	What it Supports	What to Look For
Economic Development Strategy or Plan	Planning Process Risk Assessment Mitigation Strategy	Existing partners; prioritized economic growth areas, growth industries and their relative risks
Emergency Action Plan (EAP) for Dams	Risk Assessment High-Hazard Potential Dam Requirements	Location and characteristics of dams; inundation maps
Land Use Ordinances	Risk Assessment Capability Assessment	Hazard-specific provisions and overall development rules
Pre-Disaster Recovery Plan	Planning Process Risk Assessment Mitigation Strategy	Information on potential partners; risk reduction plans and strategies

Before you start the planning process, find out if other planning efforts could be aligned or integrated with the mitigation plan. This can save time and money and can also lead to better outcomes for your community. For instance, you could fold mitigation plan development into the community's process for updating their comprehensive plan, economic development plan, or community wildfire protection plan. However, keep in mind that not every planning mechanism can coordinate with your mitigation plan.

Community Rating System (CRS) Alignment

Be sure to identify and document CRS communities (or those that plan to join in the next 5 years) early in the planning process. Many CRS communities rely on their local mitigation plan updates for critical Activity 510 credit. While there are many overlaps between mitigation planning and CRS requirements, there are some differences. Knowing those differences and addressing them from the beginning will allow a community to maximize the CRS credits earned from the mitigation plan. If the mitigation plan does not meet the CRS planning requirements, you will need to develop a separate plan. Refer to FEMA's Mitigation Planning and the Community Rating System Key Topics Bulletin for more information.

More information on aligning the mitigation planning process to CRS credits can be found in the CRS crosswalk.

1.3.2.2 FEMA RISK MAPPING, ASSESSMENT AND PLANNING (RISK MAP) PRODUCTS

The Risk MAP program supports community resilience by providing data, building partnerships, and supporting long-term hazard mitigation planning. FEMA provides flood hazard and risk data products

to help guide mitigation actions. These products fall into two categories: regulatory and non-regulatory.

Communities use regulatory products as the basis for official actions required by the NFIP. Traditionally, FEMA flood studies produce regulatory products for a community. These include a Flood Insurance Study (FIS) Report and Flood Insurance Rate Maps (FIRMs) that communities use for floodplain management purposes. The FIRMs are the official community maps that show special flood hazard areas and flood risk premium zones. When the NFIP completes a flood study, the data and maps are assembled into an FIS report. This report has detailed flood elevation data in flood profiles and data tables. These maps and products can be primary sources of flood data for your local plan. It is key to understand that flood hazards are dynamic and change over time because of development, land use changes, climate change and other variables.

Non-regulatory products go beyond the basic flood hazard information found in the regulatory products. These products provide a more user-friendly analysis of flood risks within a Risk MAP Flood Risk Project. They include:

- **Changes Since Last FIRM.** This shows changes made to the regulatory floodplain and floodway during a map update.
- **Water Surface Elevation Grids.** This dataset allows the user to find flood elevations for the entire floodplain.
- **Flood Depth Grids**. These illustrate the varying flood depths in flood prone areas.
- **Percent Annual Chance Grids**. These display the likelihood that a given location will flood in any single year.

Not every community receives both regulatory and non-regulatory products. The FEMA Map Service Center is the best place to find these materials. Communities should review the products available for their area when beginning or updating a mitigation plan.

1.3.3. Technical Assistance

Some parts of the planning process or plan preparation can benefit from technical assistance. If you need outside technical assistance to help form the plan, think about how to use that aid to build long-term community capabilities. Creating a mitigation plan does not require formal training in community planning, engineering or science. However, subject matter experts should be included in the planning process. Consider how personnel or contractors can help with:

- Identifying hazards, assessing vulnerabilities and understanding significant risks.
- Facilitating meetings, partner and public involvement, and decision-making activities.
- Forming an organized and functional plan with maps or other graphics.

Both states and FEMA provide training and technical assistance to local governments as a part of their mission. The state is responsible for providing training and technical assistance in applying for HMA grants and developing mitigation plans. To better understand what kind of technical assistance may be available to your local community, reach out to your SHMO.

Different grant programs may also provide some level of technical assistance based on the grant type and potential project. The Building Resilient Infrastructure and Communities (BRIC) grant program offers non-financial direct technical assistance. This can provide mitigation planning help.

Task 2. Build the Planning Team

2.1. Building the Planning Team

The second key task at the start of the planning process is to bring together a diverse and inclusive planning team. These representatives should come from each participating jurisdiction and partner organization, especially those with data, funding sources or comprehensive local knowledge. As discussed in Task 1, these planning partners have the necessary expertise to inform the plan. Additionally, partner organizations may have the authority to carry out the mitigation strategy developed through the planning process. The planning team is the core group of people responsible for:

- Developing and reviewing drafts of the plan.
- Informing the risk assessment.
- Developing the mitigation goals and strategy.
- Submitting the plan for local adoption by each participant.

Many local agencies have an interest in, and tasks related to, mitigation. The planning process should include these agencies. For example, emergency management and community planning staff in local government have unique knowledge and skills. These skillsets make them potential leaders for the planning process. Local emergency management staff know area-specific threats, hazards, risks, vulnerabilities and past occurrences. They may also have more experience working with state and federal agencies on mitigation projects and activities. Community planning staff are familiar with zoning and subdivision regulations, land use plans, economic development initiatives, climate adaptation and resilience plans and projects, and long-term funding and planning mechanisms to carry out mitigation strategies. They may be trained to do public outreach, lead and facilitate meetings and develop a plan.

Community development and emergency management staff can lead the development of a local mitigation plan. Other departments may be able to do the same. When determining leadership, think about who has the time and resources to commit to the whole planning process. It can be helpful to designate a lead jurisdiction who is handling all the coordination for the plan. Each jurisdiction in a multi-jurisdictional plan should have a lead representative to coordinate its planning process, engage partners and conduct public outreach.

2.1.1. Multi-Jurisdictional Planning Team

If you are developing a multi-jurisdictional plan, creating a group planning team structure that allows for coordination and accountability between jurisdictions is key. If using this approach, each jurisdiction should have at least one representative on the planning team. This representative will

coordinate and delegate any tasks within their part of the planning area. They should also manage the inputs and content (including public outreach and engagement) they contribute to the plan. Each participating jurisdiction, including special districts, will need to meet the requirements to be able to adopt the plan. This means being an active participant in the planning process. It also means providing local context and detail, as well as reviewing the draft plan and providing comments.

Not every planning team will be the same. The structure of the planning team depends on the needs of local participants. Think about different types of organizational structures when you form your planning team. This could include a planning committee divided into one steering committee and one separate planning team for each participating jurisdiction. The core planning group can manage the overall plan activities. It can also directly help with the decision-making process.

Some planning teams may have a single point of contact (POC) or representative for each jurisdiction. Others may have more than one. Even if the planning team has more than one representative from a particular jurisdiction, it is a good idea to designate one lead POC for each jurisdiction. This person will report back to their departments, partners and the public on a regular basis. They will also gather feedback and input for the plan from stakeholders.

Requirements for Multi-Jurisdictional Plans

Any jurisdiction or organization may join in the planning process. However, to request FEMA's approval of the plan and thus be eligible for HMA grants, each local jurisdiction must meet all of the requirements of 44 CFR §201.6. In addition to the requirement for participation in the process, each jurisdiction in a multi-jurisdictional plan must show that they have done the following:

- Identified hazards specific to their jurisdiction and addressed specific vulnerabilities (each jurisdiction's risk likely differs from those of the entire multi-jurisdictional planning area).
- Discussed their participation in the NFIP and identified repetitive loss properties.
- Developed mitigation action items that addressed each identified hazard.
- Identified opportunities for integrating the completed plan into other planning mechanisms.
- Addressed changes in development since the last plan and how this affected vulnerability (plan updates only).
- Provided the status of all previous mitigation actions (plan updates only).
- Formally adopted the plan.
- Any participating jurisdiction that develops mitigation actions in the plan must identify what its capabilities are to support the mitigation strategy.

The mitigation plan must clearly list the jurisdictions that participated in the plan and are seeking plan approval. It also helps to include a map of the planning area with jurisdictional boundaries marked.

2.1.2. Identify Planning Team Members

When building the mitigation planning team, start with existing community organizations or committees. For mitigation plan updates, bring together as many members of the team from the last planning process as possible. Add in any new individuals or organizations. A committee that oversees the comprehensive plan or addresses issues related to land use, transportation or public facilities can be a strong foundation for your team.

Adding in a diverse array of planning team members can create a comprehensive view of how threats and hazards affect:

- Economic development.
- Housing, health and social services.
- Infrastructure.
- Natural and cultural resources.
- Underserved communities and socially vulnerable populations.

You can also build on your community's Local Emergency Planning Committee (LEPC). This group deals with hazardous materials safety and may also address other threats and natural hazard issues. In small communities, LEPCs may comprise the same people and organizations that the mitigation planning team needs.

2.1.2.1 REQUIRED STAKEHOLDERS

Stakeholders are individuals or groups that a mitigation action or policy affects. Stakeholders may include businesses, private organizations and residents. Involving them in the planning process helps to gain support for the plan and identify barriers to carrying it out.

It is crucial to distinguish between those who should serve as members of the planning team and other stakeholders. Planning team members work in all stages of the planning process; stakeholders may not. However, they can advise the planning team on a specific topic. They can also give input from varied points of view in the community.

Some stakeholders **must** have the chance to be on the planning team or otherwise involved in the planning process:

- **Local and regional agencies involved in hazard mitigation activities.** Examples include public works, emergency management, local floodplain administration and Geographic Information Systems (GIS) departments.
- **Agencies that have the authority to regulate development.** Examples include zoning, planning, community and economic development departments, building officials, planning, commissions and other elected officials.
- **Neighboring communities.** Examples include adjacent local governments, including special districts and tribes, that are affected by similar hazard events. They also may share a mitigation action or project that crosses jurisdictional boundaries.
- **Businesses, academia and other private interests.** Examples include private utilities, chambers of commerce, dam owners, local or regional educational centers within the jurisdiction, or major employers that sustain community lifelines.
- **Nonprofit organizations, including community-based organizations, that work directly with and/or provide support to underserved communities and socially vulnerable populations.** It is key to bring partners to the table who can speak to the unique needs of these groups. They can make sure the planning process supports these populations and includes their voices in the plan. These groups may include:
    - Faith-based organizations.
    - Disability services agencies or non-governmental organizations (NGOs).
    - Rural support agencies.
    - Health and social services departments.
    - Housing agencies and housing advocacy groups.

An opportunity to be involved in the planning process means that these stakeholders are invited to participate. It could also mean they are asked to share information or input to inform the plan's content. Some communities may need more targeted outreach and engagement. This is especially true of underserved communities. Outreach and engagement efforts should respond to the communities' specific needs. For instance, some community members may lack access to high-speed internet. As such, they may not be able to access websites, social media campaigns, email newsletters or virtual meetings.

Spotlight on High Hazard Potential Dams

The Water Infrastructure Improvements for the Nation Act added the Rehabilitation of High Hazard Potential Dams (HHPD) grant program that includes all dam risks.

To be eligible for HHPD grants, local governments must have:

- Jurisdiction over the area of an eligible dam.
- An approved local mitigation plan that includes all dam risks and complies with the Stafford Act, as amended.

When designing the planning process, localities must engage the state dam safety agency and/or dam owners. These partners will have data to support addressing and reducing risks to and from dams in the planning area. The plan must describe how these partners participated and what data they provided. To be eligible for HHPD funding, bring these partners into the planning process early and engage them often.

The Guide outlines the full HHPD requirements to have an approved local mitigation plan that includes all dam risks. Those elements include the planning process, risk assessment, etc. The full list is in Section 4.7 of the Guide. The HHPD requirements do not need to be addressed in a separate section of the plan. They can be woven into the appropriate section. For multi-jurisdictional plans, consider meeting the requirements for all participating jurisdictions, including special districts.

To meet requirement HHPD1, the local mitigation plan must:

- Describe how the local government coordinated with local dam owners and/or the state dam safety agency.
- Document the information shared by the state and/or local dam owners. Examples may include:
  - Location and size of the population at risk, as well as potential impacts to institutions and critical infrastructure/facilities/lifelines.
  - Inundation maps, EAPs, floodplain management plans and/or data, or summaries provided by dam breach modeling software, such as HEC-RAS, DSS-WISE HCOM, DSS-WISE Lite, FLO-2D, as well as more detailed studies.

2.1.2.2 COMMUNITY LIFELINE STAKEHOLDERS

Stakeholders should also include people who represent community lifelines. Community lifelines are the vital services in a community. When stabilized, they enable all other aspects of society to function. Think about the agencies or companies that represent your community's lifelines and invite them to be a stakeholder for your mitigation plan.

Table 4: Community Lifeline Stakeholder Contributions to the Plan

Lifeline	Example(s)	
Safety and Security	Law enforcement, police stations, site security, fire service, search and rescue, government service (emergency operations centers, government offices, schools, historic/cultural resources), community safety.	▪ Provide first-hand knowledge of past hazard events and response systems. ▪ Connect the mitigation plan to the Threat and Hazard Identification Risk Assessment (THIRA) planning process and vice versa. ▪ Share data on lifeline locations, protection measures and capabilities that support local resilience.
Hazardous Materials	Oil and HAZMAT facilities.	
Food, Water, Shelter	Food distribution programs, commercial food supply chain, drinking water utilities, wastewater systems, housing and commercial facilities, animals and agriculture.	▪ Coordinate housing issues to identify risk and vulnerabilities to this sector and lifeline. ▪ Ensure the mitigation strategy directs new and redeveloped housing away from hazard areas and uses the latest building codes to maintain safe housing. ▪ Use the planning process to: ○ Understand high-risk areas and at-risk populations. ○ Increase awareness of potential funding to support housing development and maintaining Food, Water, and Shelter lifelines. ▪ Share data on lifeline locations, protection measures, and capabilities that support local resilience.

Lifeline	Example(s)	
Health and Medical	Medical care, hospitals, pharmacies, home care, public health services, emergency medical services, medical supply chain, fatality management services.	▪ Help the planning team understand social vulnerability in the community, including underlying stressors. ▪ Help identify actions and projects that reduce risk exposure for underserved communities and socially vulnerable populations. ▪ Link socially vulnerable populations or the organizations that serve them to grants and other assistance, before and after a disaster. ▪ Connect traditional health, medical and social services and mitigation funds. ▪ Integrate mitigation into the disaster recovery process. ▪ Share data on lifeline locations, protection measures, and capabilities that support local resilience.
Energy	Power grid generation, transmission, and distribution systems, fuel processing, storage, pipelines, and distribution.	▪ Identify at-risk infrastructure assets, including transportation, energy, communications, water conveyance and supply chains. ▪ Develop and prioritize mitigation actions for at-risk assets.
Transportation	Highways, roads, bridges, mass transit, railway, aviation, maritime.	

Lifeline	Example(s)	
Communications	Infrastructure (wireless, cable, broadcast, satellite, internet), responder communications, alerts, warnings, and messages, financial banking services, 911 and dispatch.	▪ Integrate resilience into infrastructure investment decisions. ▪ Share data on lifeline locations, protection measures, and capabilities that support local resilience of infrastructure (highways, roads, bridges, mass transit, railway, aviation, maritime). Develop and prioritize mitigation actions for at-risk assets. ▪ Integrate resilience into infrastructure investment decisions. ▪ Share data on lifeline locations, protection measures, and capabilities that support local resilience (cable, broadcast, satellite, internet) ▪ Develop and prioritize mitigation actions for at-risk assets.

Using the Guides to Expanding Mitigation to Identify Partners

FEMA's Guides to Expanding Mitigation cover a wide range of topics to help mitigation planners find new and innovative ways to support mitigation activities while engaging diverse partners and stakeholders. These guides help local communities inform and update mitigation plans. They include connecting mitigation to the following topics, among others:

- Agriculture.
- Public health.
- Transportation.
- Older adults.
- People with disabilities.
- Equity.

2.1.2.3 OTHER STAKEHOLDERS

Each jurisdiction may define other interested stakeholders. These depend on the unique characteristics and resources of the community. The following stakeholders are vital in mitigation planning:

- **Elected officials and planning commission members.** Elected officials are responsible for protecting the health, safety and welfare of their residents. They are often leaders or members of the governing bodies that adopt the plan. The level of support that the elected officials give to the mitigation plan's goals and actions guides the plan's progress and implementation. It also guides the resilience of the community.

- **Business leaders and large employers.** Economic resiliency drives a community's recovery after a disaster. A key part of mitigation planning is identifying the economic assets and drivers whose loss or inability to operate would severely affect the community's ability to recover from a disaster. Involve economic development officials, the local chamber of commerce and business leaders in the planning process. This can encourage them to be partners in future mitigation work. Teaching them about local risks and vulnerabilities helps this process. Economic sector representatives invited to participate in the plan should include private businesses that sustain community lifelines. These employers could be private utilities, housing and hotel owners, television and radio stations, hospitals, pharmacies and food suppliers.

- **Regional, state and federal agencies.** Public agencies are key resources for data and technical information. These include regional planning agencies, geological surveys, forestry divisions, emergency management offices, dam safety agencies and weather service offices. These groups can work at the regional, state and federal government levels. They are key resources for data and technical information. They may also be able to provide financial assistance. These agencies may have programs that will help you meet your mitigation planning goals.

- **Cultural institutions.** Cultural institutions often have special mitigation needs. These include museums, libraries and theatres. For example, they may be in a historic building or house collections that need special protection from hazards. They also may collect records and historic information on natural disasters in your community. For more information, see Integrating Historic Property and Cultural Resource Considerations into Hazard Mitigation Planning.

- **Colleges and universities.** Like public agencies, academic institutions have key resources to aid planning efforts. These resources may include natural hazards data, GIS mapping and analysis, or research on successful ways to reduce risk. The planning team may be able to work with a local college or university to engage students in the planning process. This may also help to complete research and analysis that the mitigation plan needs. You could partner with the urban planning, geology, emergency management, geography or environmental studies departments. Participating in the mitigation planning process can also help local colleges and universities understand and reduce threat and hazard risks on their campuses.

- **Nonprofit organizations.** These groups often act as advocates for residents. They can be key to public outreach, information sharing and getting support for the plan's mitigation actions. Nonprofit organizations might include:
  - Disaster preparedness and response groups, such as the local Red Cross.
  - Parks, recreation or conservation groups.
  - Historic preservation groups.
  - Faith-based organizations.
  - Parent-teacher groups.
  - Climate change groups.
  - Community-based groups that work with underserved communities, such as a local food bank. Other organizations may include housing, healthcare or social services providers.
- **Neighborhood groups or community leaders**. Many communities have neighborhood and homeowners' associations that are active and engaged in community activities. These groups can share key information about local risks and possible mitigation solutions in specific areas. Both neighborhood groups and community leaders often know the specific needs of socially vulnerable populations or underserved communities. They can make sure those groups' interests are accurately represented. They can also share information via newsletters and meetings.

In any of these categories, think about how you can include organizations that aid underserved communities and socially vulnerable populations. This will help to ensure equitable access to the planning process and the meaningful participation of all residents.

Many different stakeholders could join in the planning process. Building an outreach strategy can help you find the right contacts and contributions for each stakeholder or group. You may choose which stakeholders you contact directly, and which you include in outreach to the general public. Your choices will depend on your community's needs and the timeline for plan development.

2.1.3. Promote Participation and Buy-In

After you find potential planning team members and stakeholders, it is important to keep them engaged throughout the planning process. Getting team members with competing priorities to invest time and energy in the mitigation planning process can be difficult.

It is crucial to decide what planning team members and partners need to contribute. It is also key to decide how you will invite them to participate. When developing a plan, think about what worked and what didn't during the previous planning process. The following are ways to recruit potential team members:

- After you send an email or letter invitation, follow it up with a phone call. Talk about why their participation is needed. It will also give you a chance to answer any questions they may have.
- Send a formal invitation signed by an elected official or department head. Include a meeting agenda in the invitation. This can help to capture the interest of potential participants. It can also add a measure of structure to the planning process.
- Hold each meeting at a convenient time and place for everyone.
- Provide beverages or food at meetings to boost attendance and attention spans.

The people you invite will want to know what you expect of them. They will also want to know why their presence is important. Table 5 provides examples of how specific stakeholders can support the planning process.

Table 5: Opportunities for Stakeholders to Support the Process

Contributor	How They Can Support the Plan
Community planners	▪ Help the planning team understand: ○ Past, current and future community development trends. ○ The policies or activities that affect development. ○ The relationship between hazards and development, especially effects on underserved communities. ○ The expected future climate change impacts and their influence on hazards. ○ Local outreach, facilitation and consensus building.
Emergency managers	▪ Provide perspective as first responders. They have information on past events and existing preparedness measures. ▪ Connect to the state emergency management agency.
GIS specialists	▪ Analyze and map data to support the planning process. ▪ Explain complex information. This information may include the locations of at-risk assets in threat- or hazard-prone areas. It may also include damage estimates for a specific disaster scenario.
Public works/engineering staff	▪ Help identify current or projected problems for the community's infrastructure that the plan can address. ▪ May be able to outreach with dam owners / operators and provide relevant information.
Elected and executive officials	▪ Build public buy-in for the plan and investing in mitigation. ▪ Explain how the mitigation plan can support other social, economic or environmental goals of the community.

Contributor	How They Can Support the Plan
Floodplain administrators	▪ Provide information on your community's flood hazard maps, floodplain ordinance and repetitive loss properties. ▪ Identify actions to continue compliance with the NFIP, maintain or improve CRS scores, and reduce flood losses. ▪ Provide ideas on integrating the mitigation plan with floodplain management plans and policies.
State and federal partners	▪ Provide expertise and data available from programs with complementary missions. ▪ Support identifying and using resources across agencies.
Historic preservation and environmental protection staff	▪ Help identify sensitive areas and areas of historical and cultural significance. ▪ Provide insight into any endangered species or ecological preservation plans.
Finance staff	▪ Identify potential funding sources. ▪ Share expertise identifying, applying for and managing grants.
Public Information Officer (or other communication staff)	▪ Develop and/or implement your outreach and engagement strategy.
Land use and development partners including the agency or department that regulates building codes	▪ Share future land use and development knowledge to assess vulnerability. ▪ Help the planning team connect development patterns to when and where hazards may occur. ▪ Reduce local risk by directing development away from hazard areas and supporting hazard-resistant building codes.

Spotlight on Coastal Communities

Coastal communities face unique challenges that require specialists or subject matter experts to provide detailed and location-specific information. State coastal management programs can be helpful partners in the planning process for coastal communities. Most administer state funding programs to fill data gaps, support local planning, implement projects, and/or monitor outcomes. There is a FEMA-developed Guide to Expanding Mitigation Making the Connection to the Coast available online

Coastal management programs have technical expertise in, and can provide information that helps with:

- Hazard profiles and vulnerability assessment e.g. previous storm damages, coastal erosion, impacts of coastal flooding on coastal habitat, data on effects of climate change;

- Capability assessment, e.g. current environmental regulations in effect, ongoing and planned initiatives to improve coastal water quality; and
- Mitigation strategy, e.g. regulatory methods that could improve beach and shoreline management, as well as have natural hazard risk reduction benefits.

Examples of state coastal programs who have been effective planning partners to local communities updating their local mitigation plans, by supplying data for risk assessment, or supporting plan integration are:

- **Oregon**: Oregon Coastal Management Program coastal planners have connected local mitigation planners with state tsunami vulnerability data and supported local mapping, the adoption of Tsunami Hazard Overlay Zones, development of Tsunami Evacuation Facility Improvement Plans (TEFIPs), and more. See Planning Assistance available, especially for Tsunami Planning.
- **California**: In partnership with the Governor's Office of Planning and Research and other state and Federal agency partners, the California Coastal Commission has helped develop the Plan Alignment Toolkit, which provides guidance for aligning data, development, and stakeholder engagement processes for the Local Hazard Mitigation Plan, General Plan, Local Coastal Program Plan, Adaptation Plan/Framework, Community Wildfire Protection Plan, Disaster Recovery Plan/Framework, and Emergency Operations Plan.

Planning efforts can be more successful if the team receives official authority to form the mitigation plan. The planning team could get official recognition in the form of a council resolution or a voluntary participation agreement (VPA). This can:

- Show community support.
- Increase commitment to the process.
- Improve the chances that the mitigation actions listed in the plan will be carried out successfully.

2.1.4. Engage Local Leadership

Local elected officials and staff should provide strong leadership throughout the planning process. Leadership from elected officials with an interest in improving safety and disaster resiliency gives the planning process visibility and supports stakeholder participation.

It is also key to have a strong advocate or local champion for mitigation on the planning team. This champion can help gain the support and participation of local officials and community leaders.

Policy Connection: Element A2

Does the plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process?

Task 3. Create an Outreach Strategy

An important benefit of the mitigation planning process is that it promotes awareness of risks and elevates the conversation about making a safer, more resilient community. A plan that accurately reflects the community's values and priorities will generate more community support. That support will lead to success in carrying out mitigation actions and projects that reduce risk.

Federal regulations for mitigation plan approval require that stakeholders and the general public are given opportunities to be involved in the plan's development process. Input from community members can strengthen the content and outcomes of the mitigation plan. The plan must also state how public involvement will continue as the plan is carried out during its lifetime.

An outreach strategy identifies what you want to achieve through your outreach efforts. It also identifies who to involve in the process, and how and when to effectively engage the community. Every participating jurisdiction can employ a slightly tailored engagement strategy that suits their community's demographics and needs in addition to the lead jurisdiction's engagement strategy.

Successful Outreach

- Informs and educates about hazards and risks.
- Invites interested parties to share their views and ideas for mitigation.
- Identifies conflicts and incorporates a wide range of views and priorities early in the process.
- Shares data and information that improve the overall quality and accuracy of the plan.
- Ensures transparency and builds trust.
- Maximizes chances to carry out the plan through greater agreement and acceptance.

Case Study: Watsonville, California

The City of Watsonville's Planning Committee showed their dedication to public outreach in their Local Hazard Mitigation Plan. Committee meetings were open to the public and participation was highly encouraged. Input from the public was heavily considered in the development of the plan. All promotional and meeting materials are shown in the Local Hazard Mitigation Plan. Interpreters attended each meeting and materials were offered in both English and Spanish. Meetings also offered free parking and refreshments. A public survey gathered

input for the hazard identification and prioritization process. These public engagement activities helped the committee identify hazards, assess risk and vulnerability, record critical facilities, and develop and prioritize mitigation actions.

3.1. Plan for Public Involvement

The public must be given an opportunity to be involved in the planning process. A good public outreach effort does more than just inform the public of the plan's development. It teaches the public and motivates them to act.

Even though members of the public may not be technical experts, they can:

- Identify community assets and problem areas.
- Describe issues of concern.
- Share threat and hazard history.
- Prioritize proposed mitigation alternatives.
- Share ideas for long-term public involvement after plan adoption.

Many mitigation actions will happen on private property. This means that the public should be engaged early to understand community priorities. Public engagement should happen during each step of the planning process.

Step	Role of the Public
At the beginning of the planning process…	Introduce the plan update and identify potential areas of concern that should be included. Ask the public about the biggest issues that they see: ▪ "What keeps you up at night?" ▪ "What hazards concern you the most?" ▪ "How do these hazards affect your home, work or neighborhood?"
Once the risk assessment is complete…	Review progress and provide additional local context to the hazard profiles. Help identify potential actions for the mitigation strategy.
After the final draft of the plan is finished…	Review the plan. The public needs to be given an opportunity for review. The planning team should carefully consider their feedback and make edits to the draft as necessary.

3.2. Create an Equitable Planning Process

Elevating Equity in Mitigation Planning

The Guide states that, "local jurisdictions have a responsibility to ensure that the plan's mitigation strategy complies with all applicable legal requirements related to civil rights, to ensure nondiscrimination. Such compliance can help achieve equitable outcomes through the mitigation planning process for all communities, including underserved communities and socially vulnerable populations."

Throughout the planning process, local jurisdictions should make sure their mitigation program meets the needs of the whole community. The mitigation program benefits all residents, including underserved and socially vulnerable populations. To do this, the Guide asks local governments to plan for equitable outcomes. FEMA defines equity as the consistent and systematic fair, just and impartial treatment of all individuals. By leading with equity, jurisdictions can form mitigation strategies that protect the whole community. FEMA has created an Equity in Mitigation Planning resource that will be updated with new information as it becomes available.

There are three ways to think about equity within the planning process.

Procedural Equity is committing to equity in the planning process itself. This means:

- Making clear, fair and inclusive processes. Work with partners who represent underserved groups and socially vulnerable populations to design and implement outreach and engagement methods that will reach the most marginalized and/or vulnerable members of the community.
- Giving chances for meaningful input. Underserved groups should have a true voice in planning and prioritizing mitigation. Invite nonprofit and community-based organizations that support these groups to join the local mitigation planning team. Invite other representatives as well. Welcome them to share their input throughout the planning process.

Structural Equity builds on the need for accountability. It supports learning the history that led to privilege. It also supports working to correct past harms. You can address this by:

- Talking about equity early and often with the planning team. Use the principles of equity in all decision-making processes, from initial outreach to publication of the plan.
- Recognizing and dealing with the societal systems that cause inequity.
- Forming organizational infrastructure to address inequities. This should happen both at the staff and leadership levels. If inequities are raised during the planning process, make sure there are tools and paths to fix them. Think about working with consultants who have expertise in diversity, equity and inclusion, often referred to as DEI.

Distributional Equity asks, "Do programs result in the fair sharing of benefits and burdens across the community? Do they focus on areas and populations with the greatest need?" Distributional equity is most crucial to think about during the mitigation strategy. This is where the local government sets its goals and actions. It is vital to use a distributional equity lens when you assess and prioritize mitigation actions and projects. Distributional equity makes sure that communities that hazards disproportionately harm get benefits from mitigation actions to meet their needs.

The Guide to Expanding Mitigation: Making the Connection to Equity defines social vulnerability as the potential for loss within an individual or social group. The term recognizes that some characteristics affect an individual's or group's ability to prepare, respond, cope or recover from an event. These may differ from community to community, but they often include:

- High poverty.
- Limited access to a vehicle.
- Age (very old or very young).
- Limited English language skills.
- Disability status.
- Race.
- Ethnicity.

These factors can increase vulnerability. That is why the most at-risk members in a community often suffer the worst losses from disasters. These community members may not trust the government. They may be regularly left out of planning activities. They may also have little access to information about what to do before or after a hazard event.

Equity in mitigation planning removes barriers to the process, allowing everyone to participate in, have access to, and benefit from the process. It also means the plan's mitigation strategies (e.g., structural, regulatory, nature-based, and outreach and awareness campaigns) increase the safety of everyone. It is important to continuously and intentionally address equity challenges in the planning process. Table 6 shares some common challenges and possible solutions to increase the equity of your outreach.

Demographic Data

If you don't know where to start looking for who to include, start by building a profile of your community. The American Community Survey and U.S. Census QuickFacts provide basic demographic data that can help you determine who to include. This profile also provides the basis for who may be impacted by the hazards identified in the risk assessment. It may also factor into the projects you select in the mitigation strategy.

Table 6: Challenges and Solutions for Equitable Outreach

Challenge	Possible Solutions
Physical Barriers including a lack of transportation	▪ Provide transportation vouchers and hold meetings in locations easily accessible via public transit.
Social Barriers including a lack of childcare needed to attend meetings and workshops.	▪ Provide free childcare at all public planning workshops. ▪ Make sure to communicate this amenity well in advance to allow parents and caregivers time to plan ahead.
Temporal Barriers such as holding meetings during times when most people are working.	▪ Make sure to hold meetings during non-business hours, i.e., during evenings or on weekends.
Limited English Language Proficiency	▪ Provide translators and publish public-facing documents in languages other than English, if relevant to your community.
Historic Institutional Inequities towards many socially vulnerable populations and underserved groups may make certain community members less likely to engage with planning teams or to trust that their input will be respected and incorporated.	▪ Work to address this by being transparent and taking an active listening role. ▪ Communicate how information will be collected and used. ▪ Acknowledge historic inequities while emphasizing that the planning process is a path towards resilience for the community's most at-risk residents.
Accessibility Barriers such as a lack of accommodation for those with visual or hearing impairments.	▪ Provide closed captioning for virtual meetings and American Sign Language (ASL) interpreters for in-person engagements.

Case Study: Amherst, MA

The town of Amherst, Massachusetts, got funding for a Municipal Vulnerability Preparedness (MVP) Planning Grant in 2018. From the start, Amherst sought guidance from community organizations and community members. It wanted to learn how best to reach out to those residents who were often left out of town decision making and governance. A community liaison was engaged to conduct targeted outreach work in marginalized communities. Town staff had joined efforts by a local educational non-profit to address food insecurity among working families with children enrolled in the Amherst public school system. This work and the input from the non-profit Healthy Hampshire Food Justice Initiative led to a series of

"Community Gathering Sessions." These sessions served as an outreach effort designed to augment the broader MVP planning process.

3.3. Community Rating System

If your community participates in FEMA's CRS), you can design the mitigation planning process to maximize CRS credit for floodplain management planning. The CRS rewards communities that go beyond the minimum standards for floodplain management under the NFIP by providing flood insurance premium discounts for policy holders in the community.

The points available through the planning process account for almost one-third of the total allowable points. Communities that want to lower their flood insurance costs and maximize their CRS rating should make sure that the planning process lines up with the CRS criteria as closely as it can. FEMA has two major hazard mitigation planning programs. The first is local multi-hazard mitigation planning associated with the Stafford Act hazard mitigation provisions. The second is floodplain management planning under the CRS. The number of communities with local mitigation plans is growing. So, too, is the number of CRS-participating communities that want to improve their CRS class and increase their flood insurance discount under the NFIP.

Each program helps communities reduce their flood risk. All too often, though, if a community prepares both, they are done separately with different planning products. This does not have to be the case. Communities can coordinate these two processes. This will help the mitigation plan earn the maximum number of points possible.

3.4. Develop the Outreach Strategy

The outreach strategy is the guiding plan for how you will engage participants, stakeholders and the public. Thinking about the outreach strategy early and adjusting it throughout the planning process based on lessons learned positions you for success.

A public relations or public information official (PIO) can be a valuable partner. They help to generate messages, work with the media, and share public information throughout the mitigation planning process. If you have a PIO or other communications staff, invite them to help develop and/or implement your outreach strategy.

Use the following steps to create your outreach strategy.

1. Brainstorm outreach activities and stakeholders.

Hold a brainstorming session with the planning team at the project kickoff meeting. Use this time to identify stakeholders and consider which outreach methods will work best for the planning area. Identify existing meetings and pre-established community events that may have a connection to hazard mitigation. These may help you determine the type of outreach and when it will occur. If you are developing a plan, look at the stakeholders and outreach activities from the previous planning process. Note any needed changes and incorporate them into the outreach strategy.

2. Determine public outreach goals and schedule.

This step helps you document what you what your outreach to do, and when you plan to do it. Consider the following to determine your outreach goals:

- What input do you need from stakeholders?
- What input do you want from the public?
- How can stakeholders and the public contribute to the capability review, risk assessment and mitigation strategy?

As the project kicks off, the planning team may set a schedule of tasks and meetings to complete the new plan or update. Use this schedule to identify key times to inform and seek input from stakeholders and the public. For example, a good time to invite public involvement is after the risk assessment is done and before the planning team starts to form the mitigation strategy. Involving the public at this stage gives you a chance to:

- Educate the public on the risk assessment findings and get their reactions (did this align with their expectations or do those results come as a surprise?).
- Get input on any data inaccuracies.
- Learn their ideas and priorities for mitigation actions.

Using FEMA's Flood Risk Communication Toolkit for Community Officials

Looking for resources on risk communication and outreach? Check out FEMA's Flood Risk Communication Toolkit for Community Officials. While these resources focus on flooding, many of the outreach lessons are transferrable to the mitigation planning process.

- The Message Guide provides useful language on flood risk and resilience for the public, decision makers and community stakeholders.
- A Guide to Supporting Engagement in Rural Communities discusses best practices for outreach in rural communities.
- Designing Effective Public Meetings helps you design high-quality, engaging meetings.
- Communication Plan Guide helps you design and prepare a communication plan.

3. Identify the right outreach methods.

This step answers the question, "What are the best ways to reach out to stakeholders and the public?" Outreach methods should meet the unique needs of a community. For instance, if the planning area has a high number of Spanish speakers, develop outreach materials in Spanish. Use

targeted methods to get stakeholder input. The planning needs, schedule and budget may guide these methods, too.

No matter which methods you choose, make sure to use stakeholders' time in a meaningful and productive way. Be clear about where they can help and why their voice matters. Form a plan to gather input and then use it in the planning process. Give chances to review throughout the process. Set meeting dates, outreach methods and other activities early on.

If a disaster event recently affected your community, the public may have a keen interest in hazards and mitigation. Use this interest to engage community members in finding ways to prepare for future events. People may not join a public meeting on hazard mitigation if a hazard event has not recently affected their community. Targeted engagement can help encourage participation among those who may be unlikely to join. The planning team can find out what types of public involvement have worked well in your community before. Reaching out to people is better than asking them to come to you. For example, setting up a booth at a popular community event or getting on the agenda of a scheduled meeting could reach more people than a meeting that only discusses hazard mitigation.

Using a wide range of informational materials and methods can help you reach out to the public during the planning process. These can include news media, social media, fliers, surveys and websites. Think about sharing messages on social media platforms such as Twitter, Facebook or Instagram. Activities that involve the public should be designed to increase public awareness by presenting information (one-way communication). They should also seek input to inform the plan's content (two-way communication).

Table 7 provides examples of how communities have successfully used different types of outreach methods in mitigation planning. This table references information from the International Association of Public Participation.

Table 7: Example Outreach Methods

Outreach Method	Outreach Purpose	Example Supporting Activities
Community Events	Inform	Host a booth at a fair or other event where the community will gather. Use the booth to teach residents about preparing for natural hazards. Share materials on related topics with visitors. Consider games, giveaways or other incentives as ways to engage at the event.
Interviews	Consult	Host a series of structured discussions. They could be telephone or face-to-face interviews with leaders and representatives from each of the county's communities, school districts, and the public. This could help to identify hazards of concern and potential mitigation measures.
News Media	Inform	Work with local media outlets, including television, radio and print media partners. They can prepare stories that promote broad public involvement.

Outreach Method	Outreach Purpose	Example Supporting Activities
Public Meetings	Inform Involve	Through a participating jurisdiction's Corporate Communications and Marketing Office, email newsletters soliciting input on draft plan documents and public meeting attendance. Distribution lists could include government agencies, businesses and civic organizations. Send public meeting details to all city and county employees. Also, post them to the community's online public events calendar. Add them to live tickers that scroll across the bottom of the local government access television channel as well. Share live coverage of public input meetings and let residents share their questions or comments by email.
Presentations to Governing Bodies	Inform	Share the status of the plan with the board of county commissioners or similar governing body. These meetings should be public, and an announcement of the plan agenda item should be included in the announcement of the public meeting.
Questionnaires/ Surveys	Consult	Use a survey to get information from people who could not attend the public meetings. Post the survey to your community's social media account(s). Ask local officials to give out copies of the survey. Have copies available for residents at municipal offices. Those offices can also post an electronic version on their websites. Where applicable, create questionnaires/surveys in multiple languages.
Roundtables/ Forums	Collaborate	Sponsor a public forum to get ideas from residents on how to reduce the risk of natural hazards. This could be the main event for teaching the public. It is also a chance to let the public add to the plan's action items. The resulting ideas may inform the jurisdiction's planning team about risks, strengths, weaknesses and opportunities.
Social Media	Inform/Involve	Make a mitigation plan Facebook page, Twitter account, or Instagram account. The page or account can include small video clips of community leaders talking about the need for mitigation planning. The page or account can also link to your questionnaire/survey. Use the page or account to hold raffles or giveaways. This will help to support participation. For example, you may post that "All those who participate and share feedback through this page or account will be entered into a drawing."
Area-Specific Meetings	Involve	Host small, area-specific meetings twice each year. You can hold them at public libraries and other public venues. These

Outreach Method	Outreach Purpose	Example Supporting Activities
		meetings give you a chance to share reading materials. They can educate residents on actions they can take to mitigate natural hazards, save lives and prevent property damage. These meetings can also gather input on making the mitigation process more effective.
Website	Involve/Consult	You can use a website to promote the mitigation plan by sharing: ▪ What hazard mitigation planning is. ▪ A list of who is involved in the local planning process. ▪ How the plan update process works. ▪ Information about future stakeholder meetings and chances for public involvement. You can share contact information for questions or comments. Downloads available from the site could include copies of the existing plan, the plan update, public notices, and press releases.

4. Develop clear and consistent messages that align with community values.

Think about the community's values and priorities. Consider how they line up with reducing the impacts of future hazards and disasters. Then, set talking points for discussions with a range of audiences. Form messages that appeal to them. For example, if a gold-medal trout stream or historic downtown is key to a community's identity and economy, frame mitigation messages to highlight these assets and the need for their long-term protection.

5. Evaluate and incorporate feedback from outreach activities.

Gather and assess feedback from outreach activities, then work it into the planning team's decision-making process and the final plan. During the outreach process, clearly explain to stakeholders and the public how the planning team will use their feedback to inform the plan. Set a process for:

- Organizing and assessing the comments received.
- Incorporating comments into the development of the plan itself.
- Recording the comments in the final plan.

Keep in mind that collecting public feedback is not enough; you must use public input to inform the plan. For example, use public workshops to brainstorm mitigation actions and goals.

6. Provide an opportunity for public review of the final draft plan

The public must have an opportunity to review and comment on the final draft plan before it is adopted. There are many ways that you can do this:

- Include the plan as a topic of discussion at an existing meeting.
- Share the plan on a website and promote it across social media accounts.
- Hold a meeting where the public can review the plan.
- Bring the plan to community events where you know people are gathering.

Mitigation plans are usually not small documents. Allow at least 4 weeks for review and comment. Don't forget to include time in the schedule to revise the plan based on the comments. Provide guidance on the type of comments and feedback that you want. For instance, getting the public's take on community assets and how mitigation actions are prioritized in the plan is very useful.

Tell the public when a draft is ready for review. You can do this through a press release in the local newspaper and on the community's website and social media accounts. The press release should explain how the public can share comments. Some jurisdictions have policies regarding the public review of documents before they are adopted, and these should be followed for final comments on the mitigation plan.

Policy Connection: Element A3

Does the plan document how the public was involved in the planning process during the drafting stage and prior to plan approval?

3.5. Plan Ahead for Engaging Meetings

Communities have their own ways of engaging partners: meetings, open houses, conference calls or webinars. However, meetings are the most common way of gathering partners and working through the process. Think of meetings as working sessions to get input, develop content and share ideas. Build in interactive elements to build relationships. Each jurisdiction can decide how many and what kind of meetings it needs. Meetings can follow sections of the plan, like developing the mitigation strategy or the risk assessment. The jurisdiction may also hold a review meeting at the end to summarize the plan and start reviews. Not all meetings are created alike; use this section to pick which mode (in-person, virtual, or hybrid) will work best for your planning process.

In-Person

In-person meetings are what many associate with traditional planning. Participants and stakeholders are given a chance to interact with each other and sometimes the public. It could be a workshop, traditional meeting, or other in-person format to seek direct input.

When choosing an in-person meeting, consider:

- Is the venue large enough to accommodate the expected number of attendees? Does it have facilities, including food and water, if necessary?

- Are you holding the meeting at a time of day when participants can come? Are you holding the meeting in a location where the majority of participants can get to easily?
- Do you know which materials you need to bring, such as computers, projectors, handouts or other displays?
- Do you have a strategy for keeping participants engaged? You can use sticky notes or large posters for interactive discussions and activities, and facilitate small group discussions by table.
- Is the meeting accessible for all attendees? This includes both venues that comply with the Americans with Disabilities Act and other accessibility considerations, like translated materials or an ASL interpreter. Identify these needs early in the planning process.

Virtual

Virtual events make it possible to accommodate people who are limited by time, transportation, finances, health or life circumstances from attending an in-person meeting.

When choosing a virtual meeting, consider:

- Do attendees have access to necessary information? Share materials with attendees in advance via an accessible website.
- Are you keeping your virtual attendees engaged? Use polls, chats and other engagement tools during the presentation to keep participants involved.
- Are you facilitating meaningful discussion during the event? Many webinar platforms include tools for making virtual sessions more collaborative. Breakout rooms allow smaller groups to have a focused discussion.
- Is the virtual event accessible to everyone attending? Consider whether translation, recording, live captioning and transcriptions are needed. Use closed captioning to be more inclusive of participants with hearing or language processing impairments. Know the applicable laws related to open meetings and recordings.
- Can all interested parties access the event? Consider using inclusive and low-barrier options for those with limited access to technology. Some platforms are easier to install or are available on mobile phones. Incorporate traditional methods of information sharing, such as radio, mail, newsletters, television and newspapers.

Hybrid

Hybrid meetings and events combine both in-person and virtual experiences. Having both in-person and virtual options for attendance increases the potential impact and reach of the event. Hybrid meetings can create unique, inclusive experiences that accommodate the needs of more people across larger geographies.

When choosing a hybrid meeting, consider:

- Are you giving virtual attendees an opportunity to contribute? Use live polling and audience engagement software tools to make the event interactive and engaging.
- Are microphones placed around the room in a way that allows virtual attendees to hear the in-person discussion? Test and retest the tools you will rely on to connect your virtual audience with in-person attendees. Make sure you have functioning equipment and backup technology.
- Is the meeting accessible for both in-person and virtual attendees? Identify the need for meeting translators, interpreters, closed captioning and other technical support. Have support ready to troubleshoot issues, both online and in the room.
- Do all attendees have access to the presentation materials and handouts? Provide paper handouts for in-person participants and links to downloadable documents for virtual attendees.
- Consider planning an asynchronous hybrid meeting, where the in-person and virtual portions occur at different times. This may allow for easier facilitation and a more streamlined presentation.

3.6. Coordinate Multi-Jurisdictional Outreach

If you are developing a multi-jurisdictional plan, the outreach strategy will help you manage coordination and accountability among all plan participants. For each jurisdiction seeking plan approval, the plan must document how they were involved in the planning process. This must include how they gave stakeholders and the public a chance to be involved.

Each participating jurisdiction will have its own specific stakeholders. Public involvement activities need to reach residents throughout the planning area. Consider where the outreach strategy applies to all participants equally and where you may need to tailor the approach and materials. You may develop one set of outreach materials that each jurisdiction shares with its stakeholders and residents. Another good approach is to develop one presentation or a series of presentations on the plan's progress that anyone can use. Planning team members can give these presentations at a regularly scheduled open meeting of their city council or other governing body. This will help keep elected officials informed about the planning project. It also gives the public a chance to learn more and share comments.

Outreach is key when forming a multi-jurisdictional plan. In addition to planning team meetings, you can get input through municipal workshops and open houses held throughout the planning area. Open house-style meetings can give the public a way to comment on the plan during the drafting stage. Throughout the planning process, participating jurisdictions should attend workshops, share data and/or maps, and be available to answer questions from the public.

3.7. Bringing It All Together: Describe the Planning Process

Documenting the planning process provides a clear look at who was involved and what happened. It is the record of how you developed your plan. Having this documentation helps you identify lessons learned and apply them to future planning processes. Documenting the planning process provides a blueprint to follow in future planning efforts.

The plan document needs to provide enough information to tell the story of how the community formed the plan. This description is helpful for plan readers, which include local government officials, elected officials, stakeholders and the public. It helps them understand how the community made decisions.

The mitigation plan must document the planning process. This means explaining the "who," "what," "when," "where," and "how" the plan was developed. There are many requirements that dictate how stakeholder and public involvement opportunities are documented during the planning process:

- The plan must describe the planning process. This can be a narrative description, but you can also include other records like copies of materials or sign-in sheets. Depending on how many meetings and engagements you had, this could be a lot of documentation. Summarize it in the plan and include copies in an appendix.

- The plan must list the representatives from each participant (local jurisdiction, special district, or other jurisdiction seeking approval) by agency and title. Names are not required. Protect the personal information of your planning team members, especially if you post your plan online. Explain how they participated. Participation can be met in many ways, including attending meetings, providing data, reviewing and commenting on drafts, and more.

- The plan must document that each of the required stakeholder types was given the opportunity to join in the planning process. Remember, those required stakeholders include local and regional agencies involved in mitigation activities; agencies that have the authority to regulate development; neighboring communities; representatives of businesses, academia and other private organizations; and representatives of nonprofit organizations that work directly with or provide support to underserved communities and socially vulnerable populations.

- The plan must document how the public was given the opportunity to be involved in the planning process. It must also state what that participation entailed, including how underserved communities and vulnerable populations were given the chance to participate. Remember, stakeholder participation must occur during the plan's development (prior to submitting it for review). Documentation must also explain how their feedback informed the plan.

While not required, it is helpful to document the planning process. These items may include copies of meeting minutes, agendas, sign-in sheets and newspaper articles. You can include this type of information as an appendix to the plan.

Policy Connection: Element A1

Does the plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction?

Task 4. Conduct a Risk Assessment

At its core, mitigation planning helps communities develop a strategy to reduce natural hazard risk. To do that, the plan must identify risks, impacts and vulnerabilities. This risk assessment provides the factual basis for activities proposed in the mitigation strategy. The hazards and impacts in the risk assessment should be the hazards and impacts you act on in the mitigation strategy.

Task 4 explains how to conduct a local risk assessment. How you do your risk assessment is up to you, as long as the information meets the requirements and is accurate, current and relevant. The approach you pick may depend on the data, technology and resources that are available. However you assess your risks and vulnerabilities, use both data and local knowledge. Input from the local community and stakeholders can supplement data to show a complete picture of risk, even if it is based on lived experiences.

The process of assessing risks and vulnerabilities can be tied to other planning initiatives. You can use it to set up priorities for preparedness and response, land use planning or other community decision making.

4.1. Defining Risk Assessment

In hazard mitigation planning, risk is the potential for damage or loss when natural hazards interact with people or assets. These assets may be buildings, infrastructure or natural and cultural resources. The way natural hazards interact with a community's people, property and assets can result in a disaster. A risk assessment is a robust, data-driven analysis. It explains what might happen. It also finds where the local jurisdiction is vulnerable to hazards. FEMA encourages localities to include overviews and summaries from their data analysis. The conclusions they draw from these data are more useful than the raw data. You can include raw data in appendices or annexes to support your conclusions. When the planning team finds data gaps or limitations, they should note the issues and add a mitigation action to fix them.

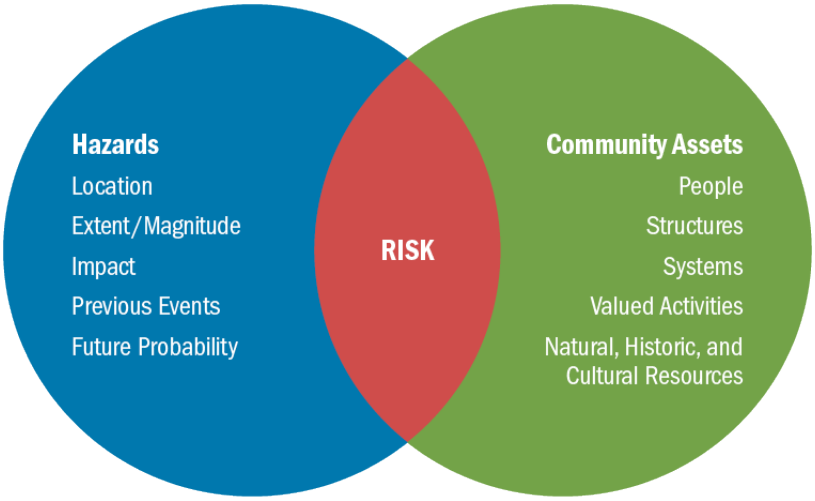


Figure 5: Risk is the relationship, or overlap, between hazards and community assets. The smaller the overlap, the lower the risk.

Your risk assessment identifies the hazards that can affect each participant in the planning area. For each hazard, consider:

- Where it might happen in the planning area (location).
- How minor or severe it may be (extent).
- How often and where it has happened in the past (previous occurrences).
- How likely it is to occur and how it may change (frequency, intensity, etc.) in the future (probability).
- Which assets are at risk from it (vulnerability).
- The effects it will have on assets (impacts).

Key Definitions

Natural hazard: a source of harm or difficulty created by a meteorological, environmental or geological event. Natural hazards, such as flooding and earthquakes, impact the built environment, including dams and levees.

Community assets: the people, structures, facilities and lifelines that have value to the community.

Vulnerability: a description of which assets, including structures, systems, populations and other assets as defined by the community, within locations identified to be hazard prone, are at risk from the effects of the identified hazard(s).

Impacts: the consequences or effects of each hazard on the participant's assets identified in the vulnerability assessment. For example, impacts could be described by referencing historical disaster damage with an estimate of potential future losses (such as percentage of damage vs. total exposure).

Risk: the potential for damage or loss created by the interaction of natural hazards with assets, such as buildings, infrastructure or natural and cultural resources.

4.2. Steps to Conduct a Risk Assessment

The risk assessment process generally has five steps:

Identify hazards. This step helps you understand what hazards may occur in the planning area.

Describe hazards. This step helps you know more about the hazards. It looks at where they can happen, how impactful they might be, when they happened before, how often and with what intensity they may occur in the future.

Identify community assets: This step looks at which assets are most vulnerable to loss during a disaster.

Analyze impacts. This step describes how each hazard could affect the assets of each community.

Summarize vulnerability. This step brings all the analysis together. It uses the risk assessment to draw conclusions. From these conclusions, the planning team can develop a strategy to increase the resilience of residents, businesses, the economy and other vital assets.

Multi-Jurisdictional Considerations

Each jurisdiction has unique assets, vulnerabilities and overall risk. A multi-jurisdictional plan needs to identify every hazard (from the whole planning area). Risks may differ across the planning area, so it is important to specify the hazards that affect each jurisdiction. For example, a hillside community may have issues with landslides that are not a threat elsewhere. Communities near the coast may face erosion issues that are not seen inland. Keep in mind that the hazard source does not have to be within your boundaries for it to affect you, like inundation from dam failure.

Each participant must describe how the selected hazards affect its jurisdiction. Some hazards will have similar effects across the area: extreme temperatures, windstorms, winter weather, drought, heavy rain, etc. Some have a smaller location and will vary based on geography. Multi-jurisdictional plans must explain these differences.

In planning for multiple jurisdictions, the risk assessment must address the unique and varied risk information for each participating jurisdiction. This includes the location, extent, past

occurrences, future probability, vulnerability and the potential impacts. This information will be used to develop specific mitigation actions for each jurisdiction.

4.2.1. Identify Hazards

The first step in the risk assessment is to identify the hazards that affect your planning area. This includes assets in other jurisdictions that may affect yours, like an upstream dam or levee. To identify hazards:

- Review your state's hazard mitigation plan. These plans summarize risk statewide. If the state identified that your planning area is at risk, it should probably be in your plan. If the state has identified a hazard for your area, and the planning team decides to exclude it, explain why.
- Look at recent mitigation plans developed for nearby areas.
- Interview your planning team, stakeholders and the public. Ask them which hazards affect the planning area and should be in the mitigation plan.
- Check local sources of information. Look into newspapers. Speak with the chamber of commerce, historical societies, or other groups with records of past events.
- For plan updates, start with the previously identified hazards. If they are no longer relevant, explain why. Add any new hazard events that have happened since the last plan update, including all declared disasters.

Technological Hazards and Human-caused Threats

The planning team may include technological hazards and human-caused threats in the plan. Technological hazards result from accidents or the failure of a system or structure. They may include hazardous materials spills or airplane accidents. Human-caused incidents (threats) are the intentional actions of an adversary. They include a chemical or cyberattack. Communities are welcome to include these hazards in their plan. However, FEMA will not review or require revisions related to these hazards during a plan review.

These events align more with a Threat and Hazard Identification and Risk Assessment (THIRA). Communities can use a THIRA to:

- Expand the existing hazard identification and risk assessment of a local mitigation plan.
- Provide a comprehensive approach to assess risks and impacts associated with all types of threats or hazards.
- Identify a method to assess a broader range of capabilities for prevention, protection, response, recovery and mitigation, as well as any gaps.

Comprehensive Preparedness Guide 201 has more information on the THIRA process and methodology. For information on how to align the THIRA and the mitigation plan, read the Increasing Resilience Using THIRA/SPR and Mitigation Planning job aid.

4.2.2. Describe Hazards

After you know which hazards you want to address, describe them in what is commonly called a hazard profile. The profiles must describe each identified hazard's location, extent, previous occurrences and probability of future events. Plan updates should confirm the profile for any previously identified hazards and add one for new hazards. Plan updates must include any hazard events that have occurred since the last plan was completed.

4.2.2.1 LOCATION

Location is the geographic area within the planning area that is affected by the hazard. When considering location, think about assets outside the planning area that, if damaged, could cause a hazard to happen in your planning area. For example, a dam or levee may be upstream and outside of the planning area. If it fails, it could flood downstream. A fault line in a neighboring county could cause an earthquake that is felt in your planning area. Some locations may also be further defined, such as high wildfire hazard areas versus low wildfire hazard areas. The entire planning area may be uniformly affected by some hazards. If this is the case, your plan must say so.

Maps are one of the best ways to illustrate location for many hazards. You can also describe location in a narrative. If you use a narrative, describe the locations in detail to clarify where the issues are. To describe the location of the hazards in the planning area:

- Review studies, reports and plans related to your identified hazards. State and federal agencies are good sources for this information.
- Use flood-related products that FEMA made for your planning area. Regulatory and non-regulatory products can be found at the Map Service Center. These include FIRMs and other flood risk assessment products. FEMA makes these to support the NFIP and the Risk MAP program.
- Contact colleges or universities. They may have related academic programs or extension services.

4.2.2.2 EXTENT

Extent is the expected range of intensity for each hazard. It answers, "How bad can it get?" Often a scientific scale is used to help define extent. Use a narrative and/or maps to describe extent. And remember, if the extent differs across participants in a multi-jurisdictional plan, explain those variations.

How you describe extent depends on the hazard. Examples include:

- The value on an established scientific scale or measurement system, such as EF2 on the Enhanced Fujita Scale for tornadoes or 5.5 on the Richter Scale for earthquakes.
- Water depth, hail size or wind speed.
- Number of acres or feet lost to wildfire, erosion or landslides.
- Highest and lowest recorded temperatures.
- Other measures of magnitude.

The extent of a hazard is not its potential impact on a community. Extent defines the characteristics of the hazard regardless of the people, property and other assets it affects.

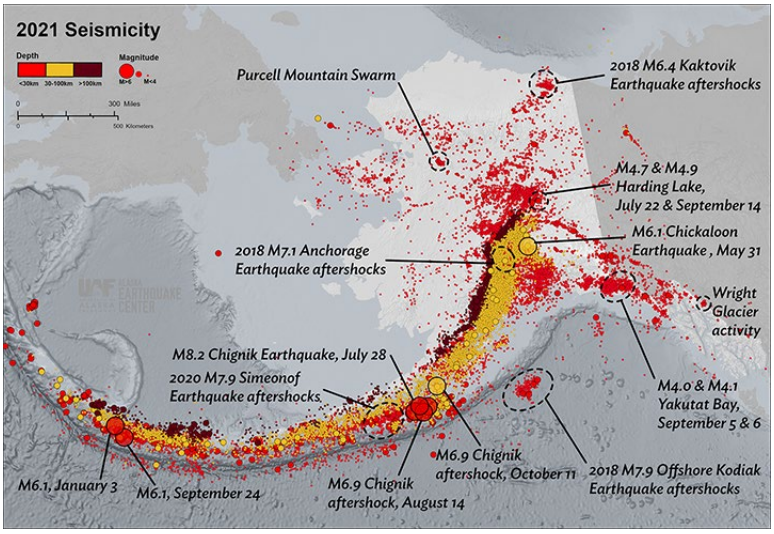


Figure 6: Earthquake locations, dates and magnitudes in Alaska. This map combines the location, extent and previous occurrences in a single image. Source: Alaska Earthquake Center.

4.2.2.3 PREVIOUS OCCURRENCES

The plan must present the history of hazard events. This information helps the planning team understand what has happened. While the past cannot predict the future, especially as climate change is causing more frequent and intense events, it can give an idea of what might happen and what is at risk. At a minimum, plan updates must document any state or federal disaster declarations in the last 5 years.

Previous occurrences are often presented in a table or on a map, but they can also be a narrative. Narratives of significant events, however the planning area defines them, can give the risk assessment more context. They can help participants develop problem statements and identify actions to mitigate the risk. There are many possible data sources to help you describe previous occurrences:

- Download weather-related events from the National Climatic Data Center Storm Events Database.
- Refer to the U.S. Geological Survey (USGS) for previous earthquakes, landslides, wildfires and volcanoes.
- Consult the National Hurricane Center for hurricane event data.
- Contact your SHMO for more data sources and information on state disasters.
- Use the OpenFEMA data to gather disaster declarations.

4.2.2.4 PROBABILITY OF FUTURE EVENTS

The probability of future hazard events describes how likely a hazard is to occur or reoccur. The plan must consider how future conditions will change the probability of events. Future conditions are more than just weather. Many things in the future might change the type, location, severity and frequency of hazards. Future conditions include changes in climate, population patterns and how land is used. Changes in weather patterns, average temperatures and sea levels can bring more extreme storms, droughts, wildfires and other disasters. Population changes mean changes in demographic trends, migration, density or the makeup of socially vulnerable populations. How your community uses and develops land can put more or fewer people, businesses and homes in harm's way. These changes can all bring changes in risk and vulnerability. Investments in mitigation will reduce those risks.

Future conditions will affect different hazards differently. The Guide specifies that probability must consider how changing future conditions will affect the **type**, **location** and **range of intensities** of each hazard. Ask yourself:

- Will changing future conditions lead to new hazards?
- Will changing future conditions cause hazards to affect more communities?
- Will hazards reach places or people they have not before?
- Will hazards we already face become more severe? Less severe? For example, rising temperatures may make extreme heat events longer and more deadly, but may cause milder winters with rain instead of snow storms.

Probability can be described in many ways. Potential approaches include:

- **Using climate model projections.** Whether you use regional data or specifically down-scaled data, using projections is the best way to account for how future variation in climate will change hazard probabilities. This method is described more below. To make decisions on the use of climate model projections, consider seeking expert advice. You could reach out to the SHMO, a state climatologist or others.

- **Using statistical probabilities.** Statistical probabilities often refer to events of a specific size or strength. For example, the likelihood of a flood event of a given size is defined by its chance of occurring each year. A common measurement is the 1%-annual-chance flood. However, this measurement is affected by changes in the watershed and rainfall intensity. It is important that you not simply generate a probability by dividing the number of times an event has occurred by the number of years of record. This simple math will not give you a realistic picture of future probability.

- **Using qualitative or general descriptions or rankings.** This should be used if there are no other available data on future probabilities. If you use this approach, define any general terms. For example, "highly likely" could be defined as occurring every 1 to 10 years. "Likely" could mean to occur every 10 to 50 years, and "unlikely" could signal intervals of over 50 years. This approach must still explain how future conditions factored into the general descriptions.

You may also want to describe any time-based probabilities, or times of the year when a hazard is more likely. For example, flooding might be more frequent in the spring because of snow melt or in late summer or fall because of hurricane season. Peak tornado season is March through June.

The exact description and method of estimating future probability may vary by hazard, but it must account for future conditions.

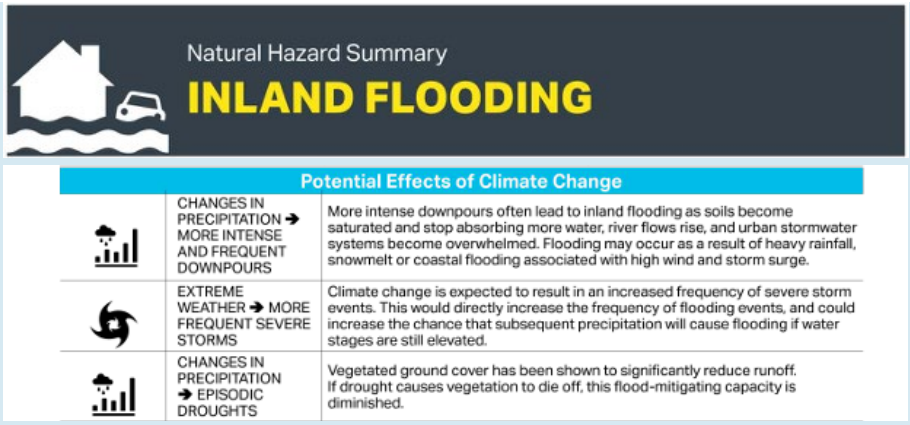
Examples: Describing Climate Impacts

State plans have included future conditions since 2015. While these examples are pulled from state-level planning efforts, they can also apply to local plans.

The 2018-2023 Colorado Hazard Mitigation Plan has tables that say how the location, intensity, frequency, and duration of each hazard event will change over time. The example below is for droughts.

Location	Mountains and plains both experience drought. Drought changes geographically from year to year and decade to decade. Location is not projected to change.
Extent / Intensity	Property damage that does not threaten structural integrity is common. Little or no impact to critical services or facilities expected. Economic and water resource impacts foreseen. Extent is not projected to change.
Frequency	Droughts are projected to increase in frequency due to shifts in seasonal precipitation patterns, including dryer summers and less precipitation falling as snow in early spring/late fall.
Duration	Droughts are projected to have a longer duration due to a changing climate, e.g. shifts in seasonal precipitation patterns, including drier summers and less precipitation falling as snow in early spring/late fall.

The 2018 Massachusetts State Hazard Mitigation and Climate Adaptation Plan has summaries of each hazard, including the potential effects of climate change.



Using Climate Projections to Determine Probability

Climate projections can be useful for making decisions about the future. However, the limitations of climate models make it easy to misinterpret or misuse their results. Be aware that:

- Climate projections are not predictions. Projections are based on assumptions about future human emissions of greenhouse gases and other policy choices.
- Climate projections do not try to predict the timing of events such as storms, droughts or El Niño. Other such weather events may include extreme temperatures, floods, hurricanes or tropical cyclones. The location and timing of future extreme weather events cannot be deduced from climate model predictions.
- Projections vary from model to model. The best projection dataset for one location and purpose may not be the best for others. Consider a range of projections to gain a more complete picture of potential risks.
- An increased spatial resolution of statistically downscaled projections is available for temperature and precipitation. It may not be available for all parameters. Also, increased resolution is not always the same as greater fidelity or reliability.

Bottom line: do not let the uncertainty, variability or underlying assumptions for climate projections be an obstacle to good planning. Reputable climate models generally agree on broader trends. For example, average or extreme temperatures are increasing. Sea levels are rising. Heavy downpours are becoming more frequent, and so on. Knowing general climate trends is enough to build this into the probability of future events.

A level of technical understanding may be required to review and evaluate the various climate models for local use. Knowing the terms used to describe climate models may help you understand which apply best to the planning area.

- **Ensembles** are collections of data from more than one climate model simulation.
- **Downscaling** is a general name for taking large-scale information and making predictions at the local level. This should be left to experts. Downscaling national data may not produce the most accurate local information and could cause more uncertainty.
- **Regional Climate Models** downscale data from the **Global Climate Model (or General Circulation Model)** and add topographic data with a higher resolution. This produces more refined, specific results. An example of this is the North American Regional Climate Change Assessment Program.

Regional Data Approach

Local data specific to your jurisdiction(s) may be limited. If so, consider a regional data approach. This approach uses national or regional data, reports, and models to identify quantitative changes in frequency or probability. An example of this is using the National Climate Assessment. The National Climate Assessment report presents changes in a variety of aspects of climate, such as precipitation, extreme events, and temperature. It includes changes by region of the country and by sector.

You can use regional or national data to summarize anticipated climate changes. You can also find potential changes to the characteristics of weather or hazard events. This is a higher level, large-scale approach. It may lack the more granular data results of downscaled climate projections. However, it can offer very helpful information and insights on anticipated future climate conditions.

Downscaled Approach

The downscaled approach takes data from a much wider scale and applies it locally. One example is NOAA's Climate Explorer. This online tool allows for a much more localized analysis of an area. It provides visual data and maps for a smaller geographic area. This makes them more relevant on a local scale. Like the regional approach, this methodology uses models and forecasts to look at the nation as a whole. It also allows your community to see how local conditions are projected to change over the coming decades. Another excellent source of information and resources is the web-based U.S. Climate Resilience Toolkit. This offers information from across the federal government in one location. Some states have better online mapping viewers with official climate data, and more are being developed. Those should be used for local plans. Some of these are even integrated with state GIS data layers. This makes them even more useful for mitigation planning.

Connecting Climate Adaptation and Mitigation Planning

Climate adaptation strategies are ways to adjust natural or human systems to mitigate the impacts of a changing environment. These may work well with other hazard mitigation strategies. For an overview of potential changes in your region, review the U.S. Global Change Research Program's Regional Climate Change Impacts reports. See NOAA's Climate Change Web Portal for more information on how climate change is affecting your area.

4.2.2.5 DISPLAYING HAZARD INFORMATION

When developing or updating a mitigation plan, hazard-specific maps are helpful for showing hazard information, though they are not required. In some cases, a detailed narrative of potential impacts and extents can accurately convey the information you need. If your community or special district is not able to take on some technical processes, use a narrative approach. You can also address this potential gap in capability as a mitigation action later in the plan. If you use a narrative, be sure to convey all the necessary information accurately and at the right level of detail. Think of it as building a verbal map.

Some communities choose to use GIS or other mapping programs to display hazard and risk information. The following figures show some ways to use maps to describe the location, extent, previous occurrences and probability of future events. This applies to various hazards. Note that one map can be used to describe several hazard features. A table or matrix can help summarize the information in the hazard descriptions. It can also help identify the planning area's most significant hazards.

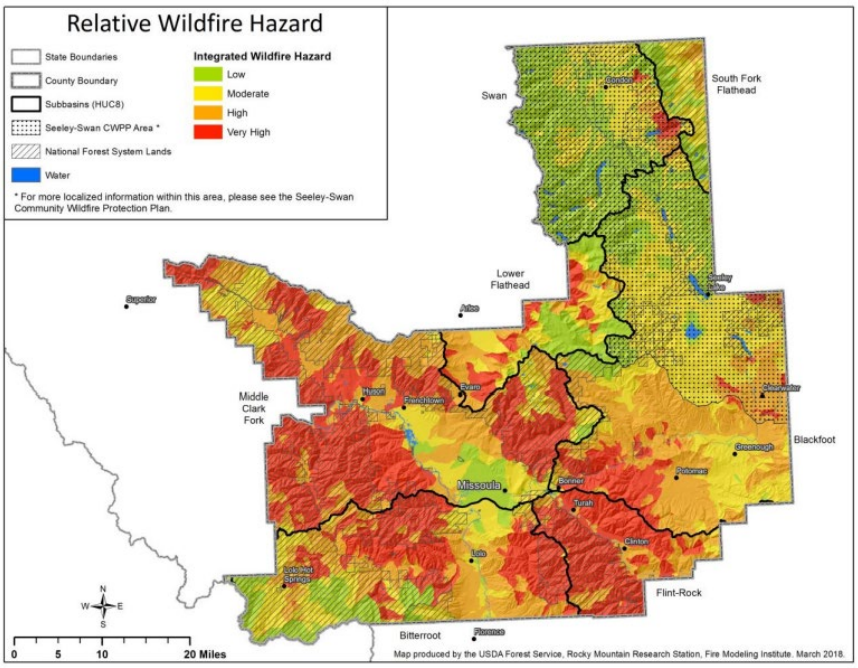


Figure 7: Wildfire hazard location and extent in Missoula County, Montana. Source: Missoula County/Community Assistance Planning for Wildfire Program.

Maps can also show the relationship between people and hazards. For example, you can create maps that show facilities that house dependent populations. Maps can identify venues that host large numbers of people. Maps can also show where socially vulnerable populations and underserved communities are. These will help show how vulnerable populations may be affected by hazards. See Figure 8 for an example of how to map the relationship between hazards and populations.

Case Study: Baltimore, MD

The City of Baltimore's Disaster Preparedness and Planning Project is their combined hazard mitigation and climate adaptation plan. Its risk and vulnerability assessment does a good job of incorporating social vulnerability. Beyond mapping the locations of socially vulnerable populations, the plan defines which groups are at risk to specific hazards. It also maps where socially vulnerable populations overlap with hazard areas. Most important, the plan links the vulnerable populations' risk to specific mitigation actions.

For example, the plan maps areas of extreme heat (or heat islands). Then, it overlays the heat islands on areas with the most vulnerable populations. In this case, the most vulnerable are people over the age of 65 and those with limited access to a vehicle. The plan explains that people over 65 face increased health risks from heat, and that people with limited access to a vehicle may not be able to get to a cooling center. The city used this analysis to identify activities to reduce the impact of heat events. An example of an exposure analysis-informed action is:

"Community resiliency planning in the Rosemont neighborhoods south of North Avenue and just east of Leaking Park, for example, should take into account the need for outreach and support for seniors in heat events as future mitigation strategies and actions."

This is a great example of how to define socially vulnerable populations, connect where they live to hazard areas, and then use the analysis to take equity-informed mitigation actions.

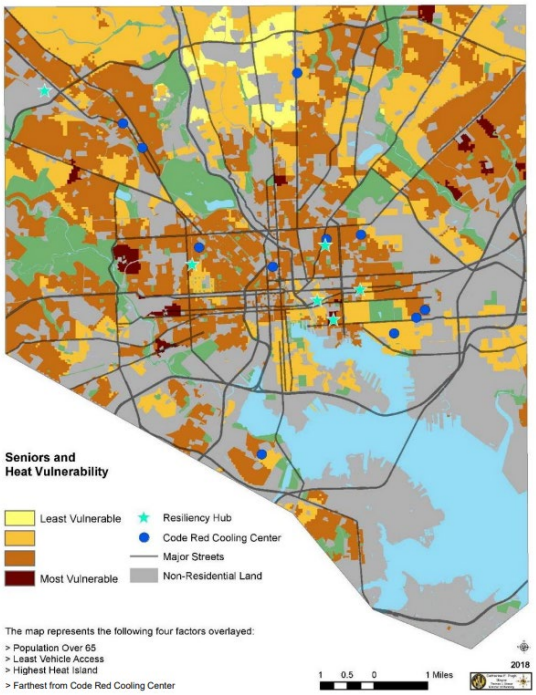


Figure 8: Extreme heat vulnerability for senior residents in Baltimore, MD. Source: Baltimore Disaster Preparedness and Planning Project, 2018.

Case Study: City and County of San Francisco

The City and County of San Francisco's Hazard and Climate Resilience Plan combines planning for natural hazards and climate change into one plan. The plan's hazard assessments incorporate different climate scenarios that will change hazard severity. The scenarios consider future conditions for temperature, sea level rise and precipitation. Scenario planning can lead to more robust mitigation actions. These stronger actions can be used to mitigate more severe hazards across different geographies.

To begin the engagement process, the planning team met with leaders from a group of community-based organizations. The team listened to their advice on the best ways to achieve the plan's goals within the communities they serve. Based on the feedback from this meeting, the planning team organized five thematic workshops with additional leaders of community-based organizations, NGOs, and other groups that serve the San Francisco community, especially vulnerable populations.

The five workshop themes were:

- Business/Commercial Properties.
- Housing, Stakeholders and Residential Property Managers/Owners.
- Disability and Functional Needs/Older Adults.
- Racial, Social and Environmental Justice.
- Children, Youth and Families.

Policy Connection: Element B1

Does the plan include a description of the type, location and extent of all natural hazards that can affect the jurisdiction? Does the plan also include information on previous occurrences of hazard events and on the probability of future hazard events?

4.2.3. Identify Assets

In this next step, each participating jurisdiction identifies its assets at risk to hazards. Assets are defined broadly. They include anything that is important to the character and function of a community. They generally fall into a few categories:

- People, including underserved communities and socially vulnerable populations.
- Structures, including new and existing buildings.

- Community lifelines and other critical facilities.
- Natural, historic and cultural resources.
- The economy and other activities that have value to the community.

All assets may be affected by hazards, but some are more vulnerable. This may come from their physical characteristics or uses. An asset inventory identifies the vulnerable assets in your community. If your plan is an update, review and update the asset inventory as needed. This ensures it reflects the current conditions.

4.2.3.1 PEOPLE

People are your community's most important asset. Your mitigation plan should assess risks to people and set strategies to protect them. For the purposes of a risk assessment, think about areas of population density and groups with unique vulnerabilities. Use the risk assessment to point out areas where people are less able to prepare, respond and/or recover before, during and after a disaster. This includes underserved and socially vulnerable populations. At this stage of the risk assessment, you are identifying where people live, work and visit. To do this:

- Note any concentrations of residents and businesses.
- Note any concentrations of underserved groups and socially vulnerable populations.
- Consider development in areas of projected population growth. Predict areas of vulnerability.
- Identify places that provide health or social services that are critical to disaster recovery.
- Identify the types of visiting populations and where they may be. Visiting populations include students, second homeowners, migrant farm workers and visitors for special events. Visiting populations may be less familiar with the local area and its hazards and will be less prepared to protect themselves during an event. Assess potential problems.

What are Socially Vulnerable Populations and Underserved Communities?

Underserved communities are defined by Executive Order 13985 On Advancing Racial Equity and Support for Underserved Communities Through the Federal Government. They are "populations sharing a particular characteristic, as well as geographic communities, that have been systematically denied a full opportunity to participate in aspects of economic, social, and civic life."

Social vulnerability, according to FEMA's Guide for Expanding Mitigation: Making the Connection to Equity, is the potential for loss within an individual or social group. The term recognizes that some traits influence an individual's or group's resilience. This is their ability to

prepare, respond, cope or recover from an event. Groups that are disproportionally impacted often include:

- Those with a low socioeconomic status.
- People of color.
- Tribal and indigenous communities.
- Women.
- Members of the LGBTQ+ community.
- People experiencing homelessness or displacement.
- Rural communities.
- The elderly and youth.
- Groups with limited English proficiency.
- Service workers and migrant laborers.
- Those with limited cognitive or physical abilities.
- Institutionalized populations, such as those in prisons and nursing homes.
- Renters.
- Those without access to personal transportation.

A risk assessment must analyze the vulnerability of the population. To do this, it is essential to include impacts to socially vulnerable populations and underserved communities. The most at-risk members in a community tend to suffer the greatest losses from disasters. Often, they are left out of planning activities. They may have little access to information about what to do before or after a hazard event.

People from these groups may not be able to access the standard resources offered in emergencies. Consider where to locate facilities and support services for them. Think about hospitals, dependent care facilities, oxygen delivery and accessible transportation.

Several data sources and indices can help you find and learn about socially vulnerable populations or underserved communities. The CDC's Social Vulnerability Index is a standalone resource. The Climate and Environmental Justice Screening Tool helps to find disadvantaged communities that face burdens and obstacles to resilience. The National Risk Index is a tool that identifies communities most at risk to 18 natural hazards. Other data sources are the U.S. Census, state population estimates, and the U.S. Bureau of Labor Statistics.

A jurisdiction can choose any dataset that adequately represents its socially vulnerable and underserved communities. It can also create or use a more specific dataset. Work with the rest of

the planning team to find partners who represent underserved and socially vulnerable communities. They can help make sure the data fully reflect ways these populations can mitigate their risks.

4.2.3.2 STRUCTURES

Identifying structures helps you understand what existing buildings and infrastructure may be in harm's way during a hazard event. Areas of future growth and development are also important for assessing the building environment because the planning area will experience some land use change over the 5 years the plan is approved. When identifying structural assets:

- Identify the types of buildings in the planning area (commercial, industrial, residential, etc.).
- Consider their age, construction type and whether any are critical facilities (see Section 4.2.3.3.). These factors can help you understand structural risk, including whether a building follows a disaster-resistant building code.

Existing Structures

All structures are exposed to some level of risk, where certain buildings or concentrations of buildings are more vulnerable. This can relate to their location, age, construction type, condition or use. Structure information usually comes from the local tax assessor or planning department. Find information on land use, zoning, parcel boundaries and ownership, and types and numbers of structures. In the absence of available local data, a national dataset of building locations is available from the USGS. These data will not be detailed, but will, at a minimum, show the location of buildings in your planning area. You do not need to include a list of every structure in your plan. Summarize the data to help you analyze vulnerabilities and impacts later. Often, this means summarizing the number of structures by type and jurisdiction.

Future Development

The mitigation plan is updated every five years, which does not mean that it's a 5-year strategy. The plan should have a long-term vision to reduce risk, so it is important to think about both the structures that already exist and what might be built in the future. You won't know exactly which buildings will be built in which locations. However, the plan should provide a general description of land uses, identified growth areas, development trends and demographic changes. This positions mitigation options to be considered in future land use decisions. Local comprehensive or master plans may have information on future land use and build-out scenarios.

Identify Future Development

- Identify any areas planned and zoned for future development or annexation.
- Look in local land use, development or comprehensive plans to identify what kinds of development are planned for growth areas. For example, there could be a planned

industrial park or a planned residential development. If they don't have that information, estimate or describe the planned development.

- Review plans for new facilities, infrastructure and other capital improvements like stormwater management infrastructure. Use these to support existing and future development.

4.2.3.3 COMMUNITY LIFELINES AND OTHER CRITICAL FACILITIES.

Beyond just buildings, identify the community lifelines and other critical facilities that are critical for life safety and the economy. The operation of these lifelines and facilities during and after a disaster is crucial. Their ability to keep functioning affects both the severity of the impacts and the speed of recovery. When possible, list their construction standards, age and life expectancy or other factors that will increase or decrease their vulnerability.

Community Lifelines

As described in Task 2, community lifelines are the fundamental services in a community. The National Response Framework identifies seven lifelines. When they function, all other aspects of society can function. They are critical for maintaining public health, safety and economic viability.

Figure 9: The community lifelines.

Lifelines were developed to support response planning and operations, but the concept can be applied to the entire emergency management cycle, including mitigation. FEMA supports efforts to protect lifelines and to prevent and mitigate potential impacts to them. It also encourages building back stronger and smarter during recovery. All of these actions drive the overall resilience of your planning area. Work with your local emergency management agency and the state emergency management agency to identify and gather data on community lifelines.

Why are lifelines so important?

A lifeline allows critical government and business functions to continue. It is essential to human health and safety or to economic security.

- Lifelines are the most vital services in the community. When they are stable, they enable all other aspects of society to function.
- FEMA's priority is to quickly stabilize the lifelines after a disaster.

- An integrated network of assets, services and capabilities provide lifeline services. It supports the needs of the community every day.
- When a lifeline is disrupted, decisive intervention is needed to stabilize it.

FEMA's Community Lifelines Implementation Toolkit gives communities information and resources. It can help them understand lifelines and how to coordinate their use. It has basic guidance on how to apply the lifeline concept during an incident response.

Other Critical Facilities

You may want to identify and plan for critical facilities that fall outside of the community lifelines framework. Doing so will reduce the severity of the impacts and accelerate recovery. When possible, note both their structural integrity and content value. What are the effects of interrupting their services? It is a good idea to include a table or series of tables in the plan that describes community assets. Include elements that describe each facility, such as:

- Name.
- Type.
- Location.
- Age.
- Structure type.
- Value.
- Backup Power/Generator Capability.

Critical facilities often work together to serve the community. Think about how they are dependent on each other to see how the identified hazards may impact the facilities. FEMA understands that because these facilities are critical, you may not want to tell everyone where they are located or their potential vulnerabilities. While the mitigation plan is a public document, you can store sensitive information in sections or appendices marked as "For Official Use Only (FOUO)."

Spotlight on High Hazard Potential Dams

To meet requirement HHPD2, the local mitigation plan must:

- Describe the risks and vulnerabilities related to HHPDs, including:
  - Potential cascading impacts of storms, seismic events, landslides, wildfires, etc. on dams that might affect upstream and downstream flooding.

- Potential significant economic, environmental or social impacts, and multi-jurisdictional impacts from a dam incident.
- Location and size of populations at risk from HHPDs, as well as potential impacts to institutions and critical infrastructure, facilities or lifelines.
- Methods and assumptions for risk data and inundation modeling.

- Document the limitations and describe the approach for addressing deficiencies.

Include all dam risks at a scale appropriate to the planning area. Consider the entire inventory of dams that have potential impacts in the planning area, even if they do not have a hazard potential classification or eligibility for HHPD funding.

4.2.3.4 NATURAL, HISTORIC AND CULTURAL RESOURCES

Natural Resources

Environmental and natural resources add to a community's identity and quality of life. They also help the local economy through agriculture, tourism and recreation. They support ecosystem services, such as clean air and water. Conserving the environment may help people mitigate risk. It can also protect sensitive habitats, develop parks and trails, and build the economy.

The natural environment can also protect residents by reducing the impacts of hazards and increasing resiliency. Examples of this include:

- Wetlands and riparian areas absorb floodwater.
- Soil and landscaping are used to manage stormwater.
- Plantings control erosion, reduce runoff and can create shade to protect from extreme heat.

Don't forget to consider natural resources, not just the built environment, as you identify assets.

Historic Resources

Historic resources tell the story of your community. Historic properties may be a (1) site, like a battlefield or shipwreck; (2) building, like a house or barn; (3) structure, like a lighthouse or bridge; (4) an object, like a fountain or monument; or (5) district, which shares a significant identity and continuity among either its sites, buildings, structures, or objects that are united historically, like a business district. In the United States, the National Historic Preservation Act, and its regulations, help the nation identify and manage its historic properties. In addition to the nationally significant historic properties on the National Register of Historic Places, a state or local community may have its own register. Historic properties offer a myriad of social and economic benefits. Your community should work to identify these important resources to protect from natural hazards.

Cultural Resources

The inventory should list assets of the local culture that are unique or cannot be replaced. Museums, geological sites, concert halls, parks and stadiums can qualify. Review state and national historic registries to identify the cultural assets that are significant to the community.

4.2.3.5 THE ECONOMY

After a disaster, economic resiliency is one of the major drivers of a speedy recovery. Each community has specific economic drivers. Considering these as you plan can reduce the impacts of a hazard or disaster on the local economy. Economic assets can have direct or indirect losses. For example, building or inventory damage is a direct loss. Functional downtime and loss of wages are indirect losses. These are losses you can calculate. Know the primary economic sectors in the community. These may include manufacturing, agricultural or service sectors. Major employers and commercial centers are also a factor. Also consider workforce housing and day care needs.

Economy

- Identify the major employers, economic sectors (e.g., agriculture) and commercial centers. What would happen if they were lost or inoperable? Would it have a severe impact on the community? Would their loss affect its ability to recover from a disaster?
- Assess the ways the economic sectors and businesses depend on community infrastructure.

4.2.3.6 ACTIVITIES THAT HAVE VALUE TO THE COMMUNITY

What activities are important to a community? Does it have long-standing traditions, such as a festival or fair? Some areas rely on seasonal industries to sustain them throughout the year. A hazard event that cancels or shortens these can affect a community's livelihood.

Tourism and farming are two examples of seasonal activities. They typically have lulls during the winter months in warmer climates, while tourism may pick up in colder regions. Extended severe weather, happening earlier or later in the season than normal, can severely impact the local economy.

4.2.3.7 UPDATE TO REFLECT CHANGES IN DEVELOPMENT

Plan updates must describe any development that took place since the last plan was approved. The planning team can get this information from planning and building departments. These data can help you evaluate whether the vulnerability has increased, decreased or remained the same. If planned development is in identified hazard areas or is not built to updated building codes, it may increase your community's vulnerability to future hazards and disasters. If development occurred with mitigation in place, vulnerability may have remained the same. Development could also reduce

risk. For example, a new fire station could be built to replace one that was not seismically sound or was in a high-hazard area.

The planning team shall also consider other conditions. Climate change, changing populations, infrastructure expansion or economic shifts can affect vulnerability. Perhaps no significant changes occurred. Maybe they did not affect the jurisdiction's overall vulnerability. In that case, you can validate the information in the previous plan. Make sure to account for shifting demographics, including those relevant to socially vulnerable populations and underserved groups.

Considerations for Plan Updates: Identify Changes in Development

Knowing how development can increase or impact the vulnerability to identified hazards is an important part of the plan. Some communities choose to remove structures using grant funds. This can permanently reduce their vulnerability. For mitigation planning, it is important to understand the impact of where and how we build.

- Have there been any changes in development that would increase or decrease your risks? These could be new buildings or assets in hazard areas or a new, stronger building code that reduced your risks.
- Are the vulnerabilities described in the last plan still valid? Were underserved neighborhoods included? Consider developing problem statements based on current conditions.

Policy Connection: Element E1

A local jurisdiction must review and revise its plan to reflect changes in development. Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a five-year cycle)?

4.2.4. Analyze Impacts

After you identify the hazards and assets, you can analyze the impacts. To do so, you will look at the risks (where hazards overlap with assets), describe asset vulnerabilities, and describe the potential impacts. Impacts may include loss estimates for each hazard. This helps the community see the planning area's greatest risks.

The plan must describe how each profiled hazard can affect the identified assets. The type and severity of impacts reflect both the magnitude of the hazard and the vulnerability of the asset. Impacts are also affected by the community's ability to mitigate, prepare for, respond to and recover from an event. You can describe impacts in many ways. They can be physical (damage), monetary

(estimated building or economic losses) or social (disrupted community life). Impacts must include the effects of future conditions, including population, land use, development and climate change.

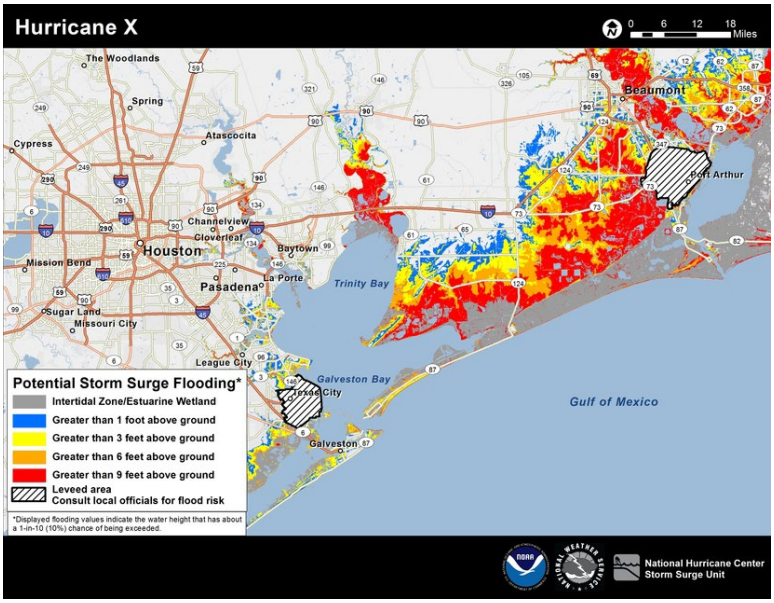


Figure 10: Storm surge inundation zones near Houston, Texas. Source: NOAA.

Not all hazard events create an impact on their own. One event can lead directly to another. These are called cascading hazards. Plans should consider how hazards can cascade. An example of this is the increased flood and landslide risk after wildfires. Or, a dam or levee may fail upstream and cause downstream flooding. Cascading events may begin in a small area. They can intensify and spread to affect larger areas. Evaluate how the natural hazards affect a local community. This is a vital piece of the hazard analysis in a local mitigation plan.

4.2.4.1 METHODS TO ANALYZE IMPACTS

There are three ways to analyze impacts:

1. **Start with the past.** Explain impacts by looking at historic impacts and losses from similar events. Describe what may happen in the future based on these past events. This is called historical analysis.
2. **Overlay assets and hazards.** This is called exposure analysis. It is usually done with maps and GIS software.
3. **Ask yourself "what if?"** This is scenario analysis. It uses hypothetical scenarios to describe impacts. This can be helpful for events that do not have a defined hazard area or do not happen often.

No matter the method, you can describe impacts qualitatively or quantitatively. A qualitative analysis may describe the types of impacts. To do this, gather a team to brainstorm and discuss potential impacts. Include the planning team, subject matter experts, stakeholders and members of the

community. A quantitative evaluation assigns values and measures the potential losses to the assets.

Mitigation Plan Updates

A plan update must address how risk has changed since the previous plan was completed. In addition to discussing overall vulnerability, plan updates must describe how development since the last plan affected vulnerability. Pay special attention to changes in demographics, land use development and hazard information. To analyze the current risk and update your problem statements, use this type of information:

- New development in hazard-prone areas.
- Areas affected by recent disasters.
- New data and reports.

The best available data are constantly changing. The local community is the best source for information on community assets and past impacts. Your SHMO and the state mitigation plan are also key resources. They can point out the best available hazard data and risk assessment information.

Historical Analysis

Historical analysis uses data on the impacts and losses of previous hazard events. These help predict the impacts and losses for a similar future event. This can be especially useful for weather-related hazards, such as severe winter storms, hail and drought. These events are frequent, so communities are more likely to know about them. Communities may have data on their impacts and losses. For recent events, don't simply consider what was damaged. Think about what might have been damaged if the event had a greater magnitude. For hazards with no recent events, consider the new development and infrastructure that would be vulnerable.

Use historical analysis to indicate future events when there is no other data available. For example, an event that has occurred 20 times over the past 50 years has a 40-percent annual probability. This data should be used with caution because current trends indicate that the type, frequency, and magnitude of hazard events will change as the climate continues to change. It may not give you a realistic understanding of future probability. Research and data on future climate and weather patterns is advancing quickly, so it is okay if you do not have detailed climate data for your plan right now. Identify where there are gaps in the data and include filling those gaps in the mitigation strategy.

Exposure Analysis

An exposure analysis identifies the existing and future assets in known hazard areas. GIS is often used for this analysis and to make maps to visualize the risk. You can also consider the magnitude of

the hazard. You may identify which assets are in areas of high, medium or low wildfire hazard, or in areas of different flood frequencies (1%- or 0.2%-annual-chance flood risk).

An exposure analysis can quantify the number, type and value of structures, community lifelines and other assets in areas of identified hazards. It can identify any assets exposed to multiple hazards. Exposure analysis can also help you understand areas that may be vulnerable if and when buildings, infrastructure and community lifelines are built in hazard-prone areas.

It can be a challenge to describe the exposure of assets to more than one hazard. Maps are a good tool for this task. A map can show at a glance that an asset is exposed to multiple threats. Figure 11 includes the location of floods, wildfires, dam failures, railroad accidents and a hazardous materials incident. It also points out where development is anticipated (new subdivisions, public facilities and commercial redevelopment). It shows future annexation areas as well.

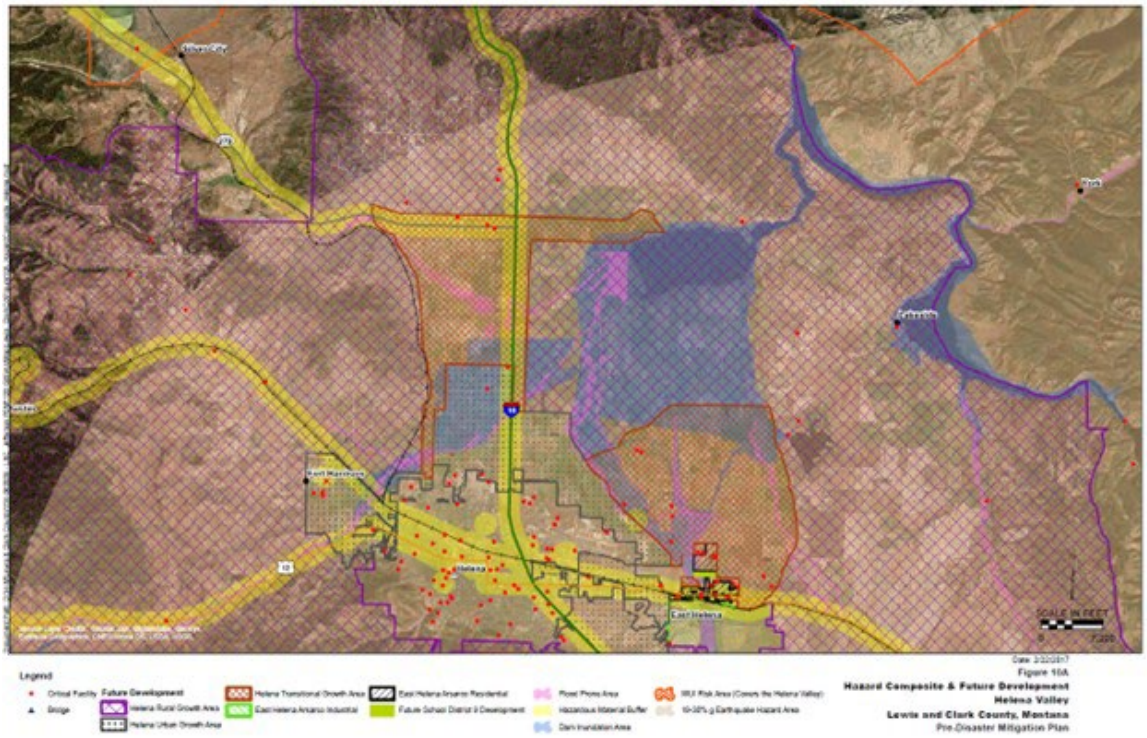


Figure 11: Map showing multiple hazard types in relation to development in Lewis and Clark County, Montana. Source: Lewis and Clark County Planning Department.

Case Study: City of Portland

The City of Portland's 2021 Natural Hazard Mitigation Plan Update is a well-organized plan with many engaging maps, photos and graphics. The risk assessment is especially detailed. Hazard profiles include detailed analyses of community risk and incorporate social vulnerability data

and discussions of climate change. The plan also includes sections for Community Voices, which draws from surveys and programs with local community groups, including underserved populations. The information collected from these activities was used to update the plan's mitigation actions and public involvement strategy. Overall, the plan goes above and beyond for every requirement, even incorporating equity into several aspects of the planning process.

Scenario Analysis

A scenario analysis asks "what if" a certain event occurs. This kind of analysis uses a hypothetical situation to think through potential impacts and losses. A scenario analysis can be done narratively by walking through a scenario with the planning team and documenting what could happen. It can also be done using GIS modeling.

FEMA's Hazus program is one of the most common scenario analysis tools for hazard mitigation. Hazus provides standardized tools and data to estimate risk from earthquakes, floods, hurricanes and tsunamis. Each model uses data on buildings, infrastructure and population together with hazard data and damage functions to model impacts. The impacts Hazus models vary by hazard. For more information on what results Hazus creates and how the software works, review the User and Technical Manuals and the Hazus trainings on FEMA's YouTube channel.

Hazus can be used "out of the box" with no modification. This basic ("Level 1") Hazus analysis produces results based on the national databases in the Hazus software. Level 1 analysis results generally take less time and expertise to generate. You can also check the Hazus Loss Library to see if there is an existing Hazus analysis for your planning area.

Users can modify all Hazus model inputs to include more refined information. Adding local data makes the output more accurate and specific to your planning area. This is called an advanced (Level 2 or 3) analysis. Level 2 and 3 analyses bring in local asset information and more detailed engineering data (see Figure 12).

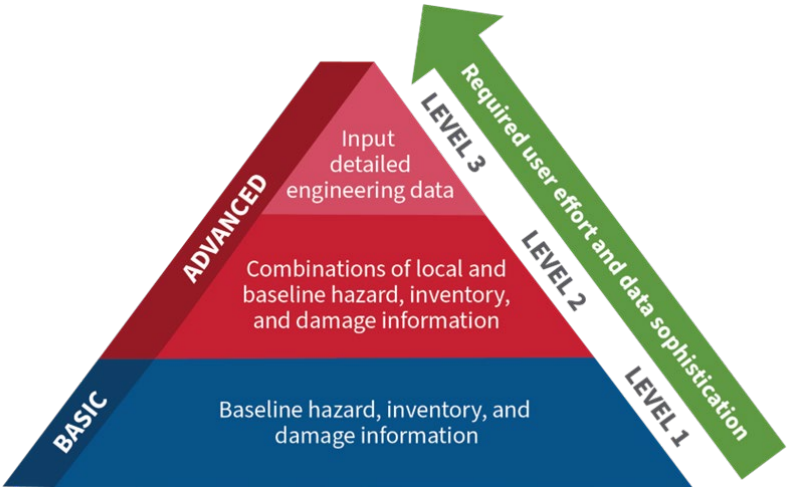


Figure 12: Levels of Hazus Analysis. Source: FEMA.

If you want to refine your analysis but do not know where to start, many professionals can help. Geologists and hydrologists can improve your hazard data. GIS professionals can replace baseline inventories with local asset information. Engineers could improve the baseline building vulnerability parameters and damage functions.

Using FEMA Risk MAP Products in the Risk Assessment

As discussed in Task 1, FEMA's Risk MAP program provides flood hazard and risk data to support planning and risk reduction. **The Guide requires participants whose planning area includes structures covered by the NFIP to use these products to assess flood risk.**

The information in Flood Risk Products (FRPs) and their datasets can enhance hazard mitigation planning activities. This applies especially to the risk and vulnerability assessment portion of the plan. They can also help users develop risk-based mitigation strategies. FRPs can be used to help guide land use and development decisions. They can help you mitigate risks by highlighting the areas of highest risk, areas in need of mitigation, and areas of floodplain change. Communities can use the FEMA Flood Map Service Center to find all the products available to them. It contains all of the effective and past products available for a study area.

So, how do you use these products in the risk assessment?

Regulatory products, including the FIRM and FIS, are the authoritative data on flood risk in a community. You can use the FIRM's GIS data to conduct an exposure analysis of flood risk and identify assets in floodprone areas. The FIS report often has documentation of previous events as well as detailed flood data across the community.

The non-regulatory FRPs strengthen communities' ability to see and explain flood risk. They can also use these data for development and planning. These products work with regulatory products, like FIRMs and FIS reports, to improve how communities:

- See where flooding is likely to occur.
- Make informed decisions about reducing the impacts of flooding.
- Protect lives, houses, businesses and critical facilities from future flood damage.

The non-regulatory products are powerful because they can be combined with local data to support risk-informed decision making. Read Using Flood Risk Products in Hazard Mitigation Plans for more on how to use these products in the mitigation plan.

Regulatory products show where certain NFIP requirements apply (i.e., minimum floodplain management standards and mandatory flood insurance purchase), and these requirements must be informed by the flood hazards of today. Future conditions information is not typically included in FEMA's regulatory products because the information can be conveyed more efficiently and comprehensively in non-regulatory products. Therefore, communities are highly encouraged to use non-regulatory products to understand future conditions.

If your community is in a watershed with an ongoing Risk MAP study, document that in the plan. Different datasets become available at different points in the Risk MAP lifecycle. A recent Risk MAP Discovery Report is another good source of information for a mitigation plan.

If your community has data that is more recent or accurate than what is on the FIRM, note that in the plan. Some communities conduct their own hydrologic and hydraulic (H&H) studies to better understand their risk. If that is the case, the plan should discuss how those data improve or add to the existing Risk MAP products.

Combining Available Data and Methods

Many plans combine methods to analyze impacts. The combination of methods will depend on the hazard. It may also depend on the available time, data, staff and technical resources. For instance, analyzing flood risk could include the following:

- Public assistance costs and insured and uninsured losses.
- Finding the number and value of community assets in flood hazard areas. Noting any specific vulnerability due to physical features or common uses.
- Estimating the physical, economic and social impacts of a 1%-annual-chance flood event, based on a Hazus model.
- Using the current zone maps to describe any future development that may be at risk of flooding.

There are many ways to analyze the data and show the results. But the analysis step should result in a description of the potential impacts of each hazard on the assets of each jurisdiction. You may use factors like annualized losses in a table to illustrate the impacts. Components that affect annual losses could include:

- Location.
- Structural damage.
- Non-structural damage.
- Contents damage.
- Total estimated losses.

These analyses can generate a lot of data. Use tables to summarize the exposed assets. You may want to include the number, type and total value of all assets in hazard areas.

Once the jurisdiction assembles data on its socially vulnerable populations and underserved communities, it can be helpful to map the data and see where they overlap with known and possible hazard areas. Socially vulnerable populations and underserved communities often do not have

access to the resources they need to become more resilient. Identify where they live, work and shop in relation to hazards. Prioritize future outreach and investments to reduce risk based on these findings.

Finding the areas where people are most vulnerable to hazards goes beyond a GIS overlay. Some measures of social vulnerability or disadvantage cannot be mapped. To understand the most vulnerable populations, look at how government policies and programs affect them. For example, discriminatory housing policies may have pushed low-income people and communities of color onto land with the least value and highest risk. Communities may be more exposed to the impacts of hazards because they do not have the funds or the manpower to reduce their risk. Evaluate the impacts of historic and current policies, programs and decisions that have caused disproportionate harm to underserved groups and socially vulnerable populations. Propose specific actions to increase resilience for those groups.

This analysis will help you create a more equitable mitigation strategy that supports underserved groups and socially vulnerable populations in achieving a more resilient future. It also equips you to reduce the risk of the people most affected. Use its results to identify actions that build resilience for these groups.

4.2.4.2 IMPACTS RELATED TO CLIMATE CHANGE

The Guide specifies that the mitigation plan must discuss the impacts of climate change in the risk assessment. You may have already discussed the effects of climate change on hazards in the profile discussions for each hazard. The impact section is another area where it is valuable to discuss climate change. The Climate Mapping for Resilience and Adaptation website has detailed information on this topic. Use it to find how climate change may affect your jurisdiction(s). Look at how climate change may shift your community's hazard exposure over time. This can guide your long-term planning for hazard mitigation. It can also help you identify areas where socially vulnerable populations and underserved communities might face a greater hazard exposure. This can help you target mitigation projects where they are needed most.

A plan's strategy section should look at the changing conditions that can impact the planning area. This means it has to look at the risks the local jurisdiction faces now and those it will likely see in the future. Those may include the impacts of climate change and other future conditions, such as changing demographics or population patterns and development trends. Localities may also need to find new mitigation actions to reflect new risks, capabilities or goals. These new factors may include changing conditions, such as climate or demographic changes, that can affect social vulnerability. One key factor to remember is that new community members are not as familiar with local hazards. Your planning process should reflect this throughout to decrease vulnerabilities in your community.

4.2.4.3 INCLUDE REPETITIVE AND SEVERE REPETITIVE LOSS PROPERTIES

The plan must address repetitively flooded, NFIP-insured structures. This includes both repetitive and severe repetitive loss properties. Identify areas of repetitive damage that Public Assistance funding could be used for mitigation in future federally declared disasters.

Table 8: Repetitive and Severe Repetitive Loss Definitions

Type	Definition
Repetitive Loss Properties	A structure covered by an NFIP flood insurance policy that: ▪ Has had flood-related damage on two occasions, with the average cost of repair at or over 25% of the value of the structure at that time; and ▪ When the second flood-related damage took place, the policy had Increased Cost of Compliance coverage.
Severe Repetitive Loss Properties	A structure covered by an NFIP flood insurance policy that has had flood-related damage: ▪ For which four or more separate claims payments for flood-related damage have been made. The amount of each claim (including building and contents payments) exceeded $5,000, and the cumulative amount of the claims payments exceeded $20,000; or ▪ For which at least two flood insurance claims payments (building payments only) have been made, with a cumulative claims total that exceeds the market value of the insured structure.

The Risk Assessment must estimate the numbers and types of these properties. The types are residential, commercial, institutional, etc. Contact your state NFIP coordinator or local floodplain administrator for how to obtain that information.

In addition to repetitive and severe repetitive loss properties, there are other factors of High-Risk Properties. These are properties that are more at risk to flooding. Some of the factors that make these properties good candidates for mitigation include those that:

- Have been substantially damaged,
- Are close to a flood source,
- Receive FEMA Individual Assistance,
- Have shown flood damage through state or local inspection, or
- Are at high risk according to sources like:
    - Elevation certificates,
    - Regulatory products like FISs or FIRMs, or
    - Hydrologic and hydraulic studies.

An example of a High-Risk Property is one where the elevation certificate shows that the lowest floor is below the Base Flood Elevation (BFE). The BFE is established by the FIRM. This means the property is at risk to both the base flood as well more frequent events.

4.2.5. Summarize Vulnerability

Vulnerability is being at risk from the effects of hazards. The term applies to assets such as structures, systems and populations. A community may define other assets in areas known to be hazardous.

The previous steps in the risk assessment create a great deal of information on hazards, vulnerable assets and potential impacts and losses. The planning team shall summarize this information to help the community understand its most significant risks and vulnerabilities. The summary of vulnerabilities then informs the mitigation strategy. It will also help you share the data with elected officials and others in a condensed and accessible format, better allowing them to make informed decisions for the community.

One good approach to summarizing vulnerabilities is to write problem statements. For instance, your analysis of impacts and losses helps you see which critical facilities are in hazard areas. You know which neighborhood had the most flood damage in the past. You know which hazard-prone areas are zoned for future development. Select the information on the issues of greatest concern. The planning team can see the impacts of each hazard. This will help them develop problem statements (see below). They may also identify problems or issues that apply to all hazards.

When you are developing a plan, revise the problem statements to reflect the current risk assessment. You may need to develop new statements. Remove or revise ones that are no longer valid. Perhaps mitigation projects have addressed the risk or conditions have changed.

Here are some example problem statements:

- The sewage treatment plant is in the 100-year floodplain. It has been damaged by past flood events. It serves 10,000 residential and commercial properties.
- The city recently annexed an area in the wildland-urban interface. The land use and building codes do not address wildfire hazard areas. Future development in the wildland-urban interface will increase the vulnerability to wildfires.
- The city is in a seismic hazard area and is subject to severe ground shaking and soil liquefaction. Hazus predicts a 6.0 magnitude event would result in $10.5 million in structural losses and $40 million in non-structural losses. Damage will be greatest to the 100 unreinforced masonry buildings (pre- building code) in the downtown business district.
- The schools are a central focus of the community. They offer opportunities to educate the public about hazards, risk and mitigation. In addition, many school facilities are vulnerable to one or more hazards, including flooding, earthquake, tornado and severe winter storms.

- Within the city, people of color and lower-income families are concentrated in high-density urban areas that receive a disproportionate exposure to extreme heat events.
- Evacuation route signs are only provided in English. The city has a large number of non-English speaking residents who therefore may not be able to access evacuation routes in a disaster.
- The city is in a coastal area that is subject to the effects of sea level rise. Climate change is causing sea levels to rise, which is causing coastal inundation that threatens over 250 residential properties.

Policy Connection: Element B2

Does the plan include a summary of the jurisdiction's vulnerability and the impacts on the community from the identified hazards? Does this summary also address NFIP-insured structures that have been repetitively damaged by floods?

4.3. Document the Risk Assessment

The quantity of information produced as part of a risk assessment varies from community to community. This variation depends on the:

- Size of communities.
- Number of participating jurisdictions.
- Number of hazards.
- Available data.
- Technical expertise.
- Other factors.

It is important to document your process for conducting the risk assessment. This is part of the planning process. Some data inputs and outputs are not likely to be needed in the main body of the plan. You may add some of that information in appendices. Some may be integrated and updated in your community's GIS program, record keeping and other systems. In the plan, the information should be focused on communicating the analysis and findings to a non-scientific audience of planners, policy makers and community members. The information discovered as you assess the risks should be directly tied to the mitigation strategy you develop.

Task 5. Review Community Capabilities

5.1. Capability Assessment

Each participant has a unique set of tools available to increase their resilience. These tools are their capabilities. They include the laws, policies, programs, staff, funding and other resources on hand to carry out the plan and increase resilience. Reviewing each participant's capabilities helps the planning team find and evaluate resources they can use to reduce disaster losses now or in the future. This is especially useful for multi-jurisdictional plans where capabilities vary.

The capability assessment is an evaluation, not a report-out. The plan must describe which authorities, policies, programs, funding and resources a participant has to accomplish hazard mitigation. The discussion must include the building codes, land use and development codes, ordinances and regulations key to reducing risk. It must also describe ways each participant can expand on and improve their capabilities. Think about how capabilities help reduce risk. Do they actively support mitigation? Do any support activities that increase risks? Address the opportunities present and be clear about the gaps and challenges.

Connecting Capabilities Throughout the Plan

The capability assessment should relate to the hazards in the risk assessment. Think about the range of resources, including staff and data, that support understanding of those hazards. Capabilities may not be hazard specific, but they should be able to meet the challenges posed by those hazards.

The capability assessment also informs the mitigation strategy. The chosen actions should either match the community's resources or support strengthening or building capacity where resources might not exist. Use the capability assessment to pick mitigation actions that are suited to each participant. For example, a participant with limited funding and no grant writing experience may need additional help from state and federal agencies to carry out a large-scale structural project that will require a grant and a large local match.

Begin by reviewing existing publicly available information that can help you understand capabilities. Each participant's capabilities are unique. It is important to include them in the assessment. You can hold interviews or ask participants to complete Worksheet 4: Capability Assessment. This worksheet points participant agencies, departments and other community partners to available programs, regulations, resources and practices. The worksheet's questions help each participant see how they

can specifically support mitigation. There is a wide range of capabilities. Not every participant will have each one. Participants may also have capabilities they can add to the worksheet.

The capability assessment requires participants to describe how they can expand on and improve capabilities. This task recognizes that the mitigation plan is a long-term strategy to reduce risk. Moving the plan into action takes time and may happen over several planning update cycles. It is important to look ahead at participants' will. Can they improve their capabilities to reduce their risk? For example, it will be difficult for a community to improve their building code if the statewide code does not include disaster-resistant provisions. Participants are not penalized for not having the authority or ability to improve a capability. However, describe those gaps. The gaps may lead to actions in the mitigation strategy.

Equity in the Capability Assessment

Keep equity in mind when looking at capabilities. Underserved communities, such as low-income and communities of color, have been systematically denied chances to participate in parts of economic, social and civic life. Consider this in the capability assessment.

Take an honest look at participants' barriers to accessing resources. Note what can be done to reduce those barriers. Second, recognize that non-traditional capabilities are valuable. For example, an underserved community in the planning area may have a strong network of community advocates who can support mitigation. Not all capabilities come from having money and legal standing. By reducing barriers for underserved communities and vulnerable populations, local governments support a whole-community approach to mitigation.

Use the following questions to bring equity into the capability assessment.

- Which communities and populations lack resources to meet mitigation goals and improve resilience? What gaps may exist that decrease an underserved community's ability to access resources and plan for risk reduction?
- Do any capabilities disproportionately benefit wealthy areas or neighborhoods?
- Do any capabilities actively increase the vulnerability of underserved and socially vulnerable populations and communities?
- How can we think differently about non-monetary and non-traditional resources and partners?

5.2. Types of Capabilities

There are four key types of mitigation capabilities:

- Planning and regulatory.
- Administrative and technical.

- Financial.
- Education and outreach.

Each type of capability may include laws, regulations, policies, programs, staff or funding. They may go beyond traditional mitigation, too. The planning team may find other capabilities that help make the planning area more resilient.

5.2.1. Planning and Regulatory

Planning and regulatory capabilities are the codes, ordinances, policies, laws, plans and programs that guide growth and development. These capabilities can either support risk reduction or create areas that are more vulnerable to disaster. Common planning capabilities include comprehensive or master plans, housing plans, capital improvement programs, transportation plans, economic development strategies, disaster recovery plans and others. Also evaluate less-common plans if they exist, such as resilience and climate adaptation plans, natural resource plans, historic preservation plans, and water efficiency and conservation plans. Local plans have specific actions or policies that support community goals and drive decisions.

This type of capability also includes regulations and related processes. The plan must discuss the existing building codes and land use and development ordinances. Land use and development ordinances include zoning, subdivision, floodplain management, wildfire or steep slope regulations. They also include processes like site plan review. These capabilities regulate where land is developed and how buildings are constructed. Planning and regulatory capabilities include current plans and regulations. You should also consider a participant's ability to change and improve them as needed.

Building Codes and Mitigation Capabilities

Hazard-resistant building codes reduce loss of life and property. The National Institute of Building Sciences' Natural Hazard Mitigation Saves study found that adopting disaster-resistant building codes saves $11 for each $1 spent on implementation. FEMA's Building Codes Save: A Nationwide Study shows that modern building codes lead to fewer property losses from natural disasters.

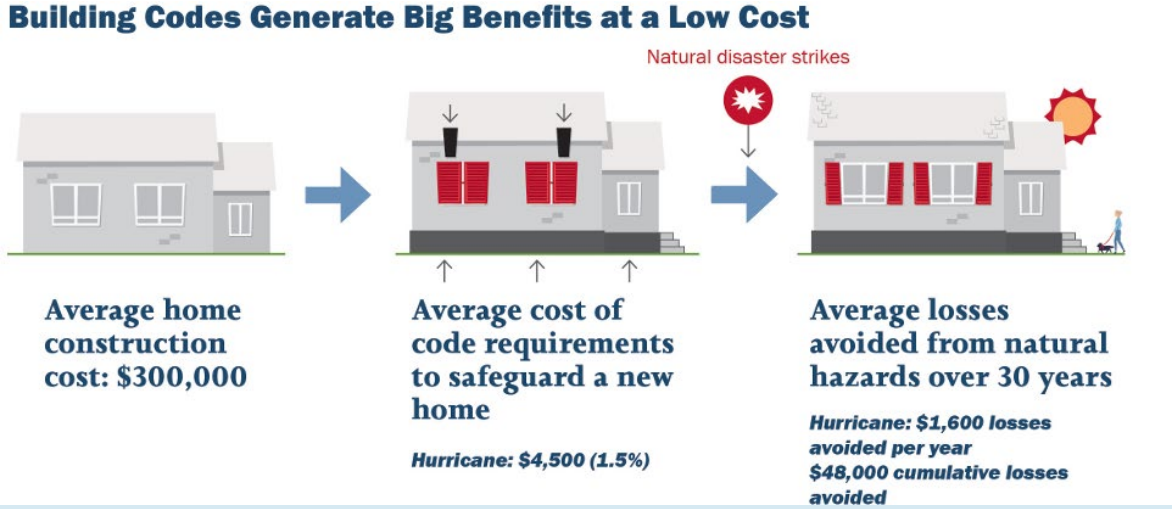


Figure 13: The Building Codes Save study shows how building code adoption and enforcement is a cost-effective way to reduce losses. In this example, a $4,500 investment leads to $48,000 cumulative losses avoided over 30 years.

Several resources support the adoption and enforcement of building codes.

- Nationwide Building Code Adoption Tracking. This FEMA resource notes jurisdictions which have adopted building codes.
- Building Codes Adoption Playbook. This FEMA resource helps states and jurisdictions promote, adopt and enforce up-to-date building codes.
- Inspect to Protect website. This Department of Homeland Security resource shows how well current building codes mitigate hazards.
- The Building Code Effectiveness Grading Schedule assesses community building codes and their enforcement.

Ask the following questions to identify and describe planning and regulatory capabilities:

- What is the legal framework for land use planning in the state and participating communities? (A useful resource for this is the 2022 Survey of State Planning Laws)
- What kinds of plans does each participant have? Which do they use most often?
- Are there any laws or ordinances that mitigate hazards?
- How do participants regulate growth and development?
- How do participants protect community lifelines and other critical facilities, including dams and levees?

- How do planning and development decisions and processes account for and/or increase hazard risk?

Case Study: Planning for Hazards (Colorado)

Land use policies and regulations can be powerful tools to promote smart growth and reduce long-term risk. Land use supports hazard mitigation in a few key ways:

- Preventing development in hazard-prone areas.
- Directing future growth to safer areas.
- Protecting existing development in hazard-prone areas.

Recognizing a need to better understand how land use can support mitigation and resilience, Colorado developed Planning for Hazards. It is a comprehensive guide on how to add hazard mitigation into land use and development plans, codes and standards. This guide is specific to Colorado; not every land use tool works in every community. However, the guide provides great background information on different kinds of planning and regulatory tools that reduce risk. It also includes model code language and advice.

Figure 14: Planning for Hazards describes six categories of planning tools that can reduce risk. It also aligns the tools to 12 different hazards.

5.2.2. Administrative and Technical

Administrative and technical capabilities are the participant's staff, skills and tools. These capabilities can be used for mitigation planning and to carry out specific mitigation actions. They also include the ability to access, coordinate and implement these resources effectively. Think of these as "people-powered" capabilities.

Human resources can include staff and volunteer engineers, planners, emergency managers, GIS analysts, building inspectors, grant writers, floodplain managers, climate and sustainability coordinators and communications specialists. For jurisdictions with limited staff, consider capacity as well as capability. Staff members may have the right skills, but do they have time to support mitigation?

This category can go beyond paid staff. It can include other public and private sector resources. County, regional, quasigovernmental or nongovernmental agencies may be able to support mitigation. Community-based organizations and other grassroots groups can also help, especially in underserved communities. They have deep roots in their communities and may have technical experts or lived experiences that can support mitigation.

Ask the following questions to evaluate these capabilities:

- Which staff are available to help carry out the plan?
- Who will be responsible for implementing mitigation actions?
- Have available staff been trained to support mitigation?
- Are outside technical expertise or resources needed?
- Do government agencies and departments regularly coordinate and problem-solve?
- Are agreements in place between participants or between participants and other organizations that provide regular administrative or technical assistance?
- Do participants work with nongovernmental organizations who also work in mitigation?

5.2.3. Financial

Financial capabilities are the resources to fund mitigation actions. Talking about funding and financial capabilities is important because mitigation actions have different costs. Mitigation actions like outreach programs are lower cost and often use staff time and existing budgets. Other actions, like earthquake retrofits, could require substantial funding from local, state and federal partners.

Consider a wide range of financial capabilities in the assessment, such as:

- Property, sales, income or special purpose taxes.
- General funds.
- Utility service fees.
- Impact fees from new development and redevelopment.
- General obligation or special purpose bonds.
- Federal funding.
- State funding.
- Private or nonprofit grants, loans or funding.
- Any other previously identified potential cash or third-party, in-kind contributions.

For any of these, consider whether the resource has been used in the past. If it has, for what kinds of activities? Could it be used for mitigation? If the funding is local, could it be used for the local match of a federal grant?

One important local government action to get funds into mitigation projects is to describe how capital projects are prioritized among competing priorities. Are projects ranked, and how? How does mitigation fit into the capital improvement plan? Are there any financial policies in place that direct available funds to mitigation projects, or that can be used as non-federal grant match?

Mitigation Assistance Resource Guide

FEMA developed and published a document called the Mitigation Assistance Resource Guide to identify federal funding, technical assistance and other resources to support hazard mitigation.

The guide identifies different types of resources that local communities can use to advance mitigation actions and increase resilience. These resource types include grants, loans and technical assistance. The guide also prioritizes programs that support the following action types:

- Education and Outreach
- Natural Systems Protection
- Planning and Regulations
- Structure and Infrastructure

The guide identifies specifics to each program such as who is eligible, hazards addressed, restrictions, cost share and a web link to the resource. The guide also briefly describes the resource and identifies a mitigation success story that used the profiled program. Some FEMA regions have expanded versions of these guides that identify state resources in addition to the federal resources.

5.2.4. Education and Outreach

Education and outreach capabilities are programs and methods that can communicate about and encourage risk reduction. These programs may be run by a participant or a community-based partner. Partners, especially those who work with underserved communities, can connect the planning team to education and outreach capabilities.

Education and outreach activities can often be the easiest and most impactful activities for local agencies. They are easy to combine with other efforts. For example, education and outreach can bring mitigation and resilience topics to places where community members are already convened. While they take careful planning, these activities can often be accomplished without outside grant funding or expertise.

Examples of education and outreach capabilities include:

- Fire safety programs.

- Flood, dam and levee safety outreach, including awareness of inundation zones.
- Public-private partnerships around disaster preparedness and recovery.
- Other federal or nongovernmental organization programs like the National Weather Service StormReady® or TsunamiReady® program or the National Fire Protection Association's Firewise USA® program.

Activities and awareness campaigns like the Great Shakeout should also be included. Some communities have their own public information or communications office to handle outreach initiatives.

Ask the following questions to describe education and outreach capabilities:

- What outreach programs do participants use to share important information?
- What venues do participants use for outreach activities? Could they be used to promote risk reduction?
- What new or additional outreach efforts could get the most public participation and support for risk reduction?

Case Study: Boulder County, CO

In its 2022 plan update, Boulder County approached its public involvement strategy with a focus on equity and inclusion. Of its five overarching goals, one was to "Improve Public Awareness and Preparedness Regarding Hazard Vulnerability and Mitigation." To do this, Boulder County launched a social media campaign to include members of the community that had historically been absent from or underrepresented in the hazard mitigation planning process.

While the original outreach and engagement plan featured several in-person public meetings, the Covid-19 pandemic forced the county to shift gears. Their revised strategy was to post updates online via the Office of Emergency Management's website and Facebook page. The county's public survey to gather information about hazard mitigation in the planning area garnered 1,700 views and 334 responses. The survey revealed that 88% of respondents had never participated in hazard mitigation planning before, making this outreach effort a clear success in engaging new community members.

In addition to its social media campaign, Boulder County gave the public many opportunities to comment on the plan over a period of several months rather than holding only one or two public meetings (as is more common).

The county went further to center on equitable and meaningful engagement opportunities by aiming to grow participation even more during the maintenance cycle of the 2022-2027

mitigation plan. Their forward-looking engagement strategy considers goals, target audiences, platforms, engagement tactics and evaluation measures for public involvement during plan maintenance.

Policy Connection: Element C1

Does the plan document each participant's existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs?

5.3. National Flood Insurance Program

Communities across the country build their flood management capabilities by participating in the National Flood Insurance Program (NFIP). The NFIP supports flood risk reduction before and after disasters. It helps reduce the socioeconomic impact of floods. The NFIP allows property owners and renters in participating communities to purchase federal flood insurance policies to recover financial losses after a flood. To participate in the NFIP, communities adopt and enforce floodplain management policies to reduce the effects of flooding.

The NFIP is a key capability for plan participants. The local mitigation plan must describe how each community complies with the NFIP. For the most part, NFIP communities are local governments, excluding special districts. The local floodplain administrator is a key resource for understanding NFIP-related capabilities. If a jurisdiction does not participate in the NFIP, state this in the plan and explain why.

The NFIP touches all four types of capabilities:

- **Planning and regulatory.** Adopting floodplain management regulations and managing development in the floodplain is an NFIP requirement.
- **Administrative and technical.** Each community must designate a floodplain administrator. Other administrative and technical capabilities that support NFIP compliance may relate to permitting, zoning or site plan review.
- **Financial.** Having NFIP policies supports financial capabilities. Having NFIP policies in a community speeds recovery and allows post-disaster funds to be used elsewhere. Joining the NFIP gives communities access to other kinds of pre- and post-disaster funding for mitigation.
- **Education and outreach.** Education and outreach programs and tools through the NFIP may support flood risk communication and mitigation.

In addressing NFIP capabilities, the plan must include information on:

- NFIP participation.

- Adoption of NFIP minimum criteria in local regulations. Participants who have adopted higher standards should explain those standards.
- Adoption of the latest effective FIRM.
- Enforcement of local floodplain regulations to manage development in the floodplain.
- Staff capabilities to implement the NFIP and local floodplain regulations.
- How participating communities use the NFIP to reduce risk after a disaster through substantial damage and substantial improvement provisions.

Communities can decide how to present this information. Communities often include a table with NFIP information and narratives for more context.

Worksheet 5 is a tool to help participants understand their NFIP capabilities. It will also help identify actions to improve the existing program. The plan does not need to include specific actions in the mitigation strategy for NFIP compliance. However, it is a good idea to include such actions to improve community-wide resilience outcomes.

5.3.1. NFIP Participation

Communities apply to join the NFIP program, adopt a resolution of their intent to participate, and adopt and submit a FEMA-approved floodplain management ordinance. They also adopt the FIRM. Communities can participate in the NFIP even if they have no mapped special flood hazard areas or are minimally floodprone.

If a plan participant does not participate in the NFIP, the plan should also state that. Non-participating communities should include why they don't participate, regardless of the reason.

Property owners and renters in nonparticipating communities cannot purchase or renew NFIP flood insurance. These community also faces other sanctions. The use of federal disaster assistance is restricted. Federal grants and loans for acquiring, repairing and constructing buildings in identified flood hazard areas are also limited. The NFIP Floodplain Management Requirements Study Guide and Desk Reference for Local Officials has more information on how the NFIP works.

First describe each participant's NFIP status. This information is in the NFIP Community Status Book. For participating communities, include when the community joined the NFIP. Nonparticipating communities should explain why they do not participate. This may include why the community was suspended and any plans it has to re-enter the NFIP, if appropriate. In addition to basic participation information, the plan may list total flood insurance policies, premiums, coverage amounts and claims history. Include any repetitive loss properties.

Being a participant in the NFIP means a local community has met the program criteria.

Participation in the NFIP is based on an agreement between communities and FEMA. The NFIP has three basic components:

1. **Floodplain mapping.** NFIP participation requires the community to adopt the FIRM to provide the data needed to administer floodplain management programs.
2. **Floodplain management.** The NFIP requires communities to adopt and enforce the minimum federal floodplain management regulations that reduce the effects of flooding on new and improved structures. States and communities may have more restrictive elements in their floodplain ordinances to provide additional safety measures.
3. **Flood insurance.** Community participation in the NFIP enables property owners and renters to purchase insurance to protect against flood losses. In exchange, the community adopts floodplain management regulations that reduce future flood damages.

5.3.2. Adoption of NFIP Standards and Maps

Participating communities must adopt NFIP minimum floodplain management criteria through local regulation. They must also adopt the latest effective FIRM. These are important planning and regulatory capabilities because they support risk-aware development decisions in and around the floodplain.

The NFIP has national minimum criteria (see 44 CFR §60 Subpart A). Participants must adopt these minimum criteria. Many states require communities to adopt floodplain management regulations that exceed the national minimum. These are called higher standards. Communities can also elect to enforce higher standards to better manage their flood risk. The plan must say whether each participant has adopted the minimum NFIP floodplain management criteria and the latest FIRM. Note the effective FIRM date. The plan should also note if a community participates but has no identified special flood hazard areas. Participants who have adopted higher standards should explain those standards. If applicable, include activities that contributed to the community's class ranking in the CRS.

Did you know?

The NFIP minimum criteria include:

- Elevating new and substantially improved residential structures to the base (1%-annual-chance) flood level.
- Elevating or making watertight (dry floodproofing) new or substantially improved non-residential structures.

- Limiting development in floodways. The floodway is the portion of the floodplain reserved to carry deeper and faster moving water.
- Protecting buildings in coastal areas from the impacts of waves and storm damage.

Higher standards provide a higher level of floodplain management and protection, as the name implies. Here are some examples of higher standards.

- Encouraging new construction to be 1 or more feet above the base flood elevation. This is called freeboard.
- Requiring roadways and other access points in a development project, especially evacuation routes, to be above the base flood elevation.
- Compensating for loss of the floodplain's ability to store water when it is filled in. This is called compensatory storage.
- Protecting critical facilities and community lifelines by prohibiting them in the special flood hazard area.
- Protecting open space beside the floodplain.
- Regulating development in community-identified or projected future flood hazard areas.

5.3.3. Staffing, Enforcement and Continued Compliance in the NFIP

Adopting floodplain management rules is only effective if the rules are followed and enforced. Each NFIP-participating community must describe how they comply with the NFIP requirements. This includes listing the agency or person responsible for implementing the NFIP in the community. This is usually the floodplain manager or administrator. The mitigation plan must do more than state that the community will continue to comply with the NFIP. It is important to explain how they will comply. Consider these questions when describing continued NFIP compliance:

- Who is the floodplain manager? Is this their primary or a secondary role? Does this person have adequate training and capacity for their role?
- Is the FIRM and FIS report in an accessible location? Does the community (or state) promote public access to floodplain information?
- How does the community support map change requests? These could be requests during the Risk MAP process or through Letters of Map Amendment or Revision.
- Does the community collect updated floodplain data or modeling? Is this shared with partners and with FEMA?
- How does the community issue development permits in the special flood hazard area? Who is responsible for permitting?
- How are floodplains regulated in new subdivisions?

- Does the community maintain elevation records? Does it track the number of buildings in the special flood hazard area?
- How does the community enforce its floodplain rules? Does enforcement include monitoring compliance and acting to correct violations?
- How does the community educate the public on floodplain management and the availability of flood insurance, in and out of the floodplain?

The floodplain manager is a key partner in understanding floodplain management enforcement and NFIP compliance. You may want to engage with your state NFIP Coordinator, too. This information may be found in the results of a recent Community Assistance Visit (CAV).

Suspended or withdrawn communities should describe the conditions of their suspension or withdrawal from the program. NFIP participation is a critical piece of the FEMA HMA grant program. Communities that do not participate in the NFIP risk losing access to important pre- and post-disaster grant programs.

Go beyond the minimum with the CRS

The is a voluntary incentive program of the NFIP. CRS communities exceed the minimum NFIP requirements to further reduce their flood risk. They do this by addressing the program's three goals:

- Reduce and avoid flood damage to insurable property.
- Strengthen and support the insurance aspects of the NFIP.
- Foster comprehensive floodplain management.

If a community participates in the CRS, note this in the plan. Communities can get CRS activity points for 19 public information and floodplain management activities. In exchange for doing these activities, residents get a discount on their flood insurance premiums. The amount of the discount is based on activity points – more points equals a higher discount.

CRS communities should describe what they've done to achieve the CRS goals. It can also be helpful to describe how they addressed challenges or issues during community assistance and monitoring activities.

One CRS activity is floodplain management planning. This can lead to a standalone plan or can be met with the mitigation plan. For more information on how to coordinate the local mitigation plan and the CRS floodplain management plan, read the Mitigation Planning and the CRS Key Topics Bulletin.

5.3.4. Substantial Damage and Substantial Improvement

The NFIP looks to reduce flood risk after a flood event. It does this through substantial damage/substantial improvement rules. These rules apply when a structure is more than 50% damaged or improved (by cost). The owner must build in a way that complies with current building codes and ordinances. This applies even if the structure was exempt from those rules before the damage or improvement. It also applies to damage from non-flood events like fire or wind. Substantial damage/substantial improvement allows communities to require owners of structures built before they joined the NFIP to comply with current standards. Communities are responsible for making substantial damage/substantial improvement determinations and notifying property owners.

The plan must describe how participants carry out the substantial improvement/substantial damage parts of their floodplain management regulations. This could include describing:

- Which agency or person makes substantial damage/substantial improvement determinations.
- Whether staff are trained to make substantial damage/substantial improvement determinations and if there are enough staff to complete them.
- The process the communities uses to make determinations.
- The community's methods for communicating substantial damage/substantial improvement requirements before and after an event.

For more details, read FEMA 758: Substantial Improvement/Substantial Damage Desk Reference.

Policy Connection: Element C2

Does the plan address each jurisdiction's participation in the NFIP and continued compliance with NFIP requirements, as appropriate?

5.4. Documenting Capabilities

After identifying and evaluating capabilities, document them. The plan must describe each participant's capabilities and how they can support the mitigation strategy. This can be done in a table or narrative. Either way, make sure the plan documents existing capabilities for **each** participant and describes **their** ability to expand and improve capabilities.

Task 6. Develop a Mitigation Strategy

The heart of the mitigation plan is the mitigation strategy. The mitigation strategy is the long-term blueprint for reducing the potential losses identified in the risk assessment. The mitigation strategy describes how the community will accomplish the overall purpose, or mission, of the planning process.

6.1. The Mitigation Strategy: Goals, Actions and Action Plan

The mitigation strategy has three main required components: mitigation goals, mitigation actions and an action plan to carry them out. These items set the framework to identify, prioritize and act to reduce risk.

Mitigation goals describe what the community wants to achieve as a desired future state with the plan, see Figure 15. They are broad, long-term policy and vision statements that explain what the mitigation strategy aims to achieve. They are visions for reducing or avoiding losses from the identified hazards.

- Example goal: Minimize new development in hazard-prone areas, including areas possibly affected by dam and/or levee mis-operation or failures.

Mitigation actions are specific projects and activities that help achieve the goals. They are measures, projects, plans or activities proposed to reduce the current and future vulnerabilities described in the risk assessment.

- Example action: Amend the zoning ordinance to discourage development in wetlands, floodplains and inundation zones.

The **action plan** describes how the mitigation actions will be carried out. The plan tells how the actions will be prioritized, administered and tied into the community's existing planning mechanisms. In a multi-jurisdictional plan, each community must clearly have actions specific to its vulnerabilities.

Figure 15: Mitigation strategy.

6.2. Mitigation Goals

The plan must include hazard mitigation goals the community wants to achieve by carrying out their mitigation plan. Clear goals that are agreed upon by the planning team, elected officials and the public are the basis for prioritizing mitigation actions. Mitigation goals must be consistent with the hazards identified and described in the risk assessment.

Common goals include:

- Minimize loss of life, injury and damage to property, the economy and the environment from natural hazards.
- Build and enhance local mitigation capabilities to ensure the safety and resilience of all community members. Reduce damage to public buildings and ensure continuity of emergency services.
- Maintain the jurisdiction's natural and man-made systems that protect against natural hazards.
- Increase cooperation and coordination among private entities, local agencies, state agencies and federal agencies.
- Protect natural, historic and cultural resources.

Whether you are updating goals or developing new ones, here are some considerations:

- **Risk assessment findings.** Review the findings of the risk assessment, especially the problem statements. Group the problem statements by themes, such as hazards, assets at risk or location. Several problem statements or groups may lead to a single mitigation goal.

- **Outreach findings.** Consider themes that stood out during planning team meetings and outreach activities. For instance, improving education and awareness about hazards may be a common theme.
- **Community goals.** Review existing plans and other policy documents to ensure hazard mitigation goals are consistent with the goals of other community plans, such as the comprehensive plan, and other objectives established by the governing body. Mitigation goals that complement other plans and policies may garner more support.
- **State hazard mitigation goals.** Review the goals included in your state's hazard mitigation plan. It may be strategic to align your plan's goals to the state's plan.

If you are developing a plan, the planning team should review the previous goals and reaffirm or change them based on current conditions and priorities.

Ensure That Goals Benefit the Whole Community

Individuals and groups within your community have differing needs, preferences and strengths. When your most underserved and socially vulnerable residents can participate in and benefit from your plan and your projects, the rest of your community will too.

You might use a planning approach in which you set large-scale goals for your entire community, but then use targeted approaches to meet those goals for even the most underserved and socially vulnerable populations.

For example, you could set a goal of making sure that all residents, workers and visitors have the ability to access safe, cool spaces during a heat wave. While the wealthiest residents most likely have access to private homes with air conditioning, lower-income residents may lack such resources. Also, anyone can be affected by storms or other disruptions to cooling systems.

To resolve this disparity and achieve the overarching goal of community resilience to high heat events, your community may decide to create public cooling centers. However, this may not meet the need. These spaces also need to be accessible to those who need them. Consider accessibility to people with disabilities, public transit availability and proximity. Also consider ways to provide travel vouchers, availability of wi-fi and charging stations (including power cords), access to potable water and facilities, and staff cultural or language competencies.

It is also important to think about the potential consequences of your plan as it may have unintended impacts on socially vulnerable populations. For instance, while many mitigation measures increase property values and improve neighborhood livability, these effects can contribute to gentrification. Gentrification often displaces low-income residents and disrupts the social fabric of a community. This could decrease the overall resilience of already-at-risk groups. By thinking through potential impacts like these, you can proactively work to address them.

Resources:

- What Equitable Mitigation Looks Like (FEMA)
- Planning for Equity: Policy Guide (APA)

Spotlight on HHPDs

To meet requirement HHPD3, the local mitigation plan must:

- Address a reduction in vulnerabilities to and from HHPDs as part of its own goals or with other long-term strategies. The plan does not need to include a goal specific to HHPDs alone.
- Link proposed actions that reduce long-term vulnerabilities consistent with the goals. Include goals to reduce long term vulnerability to HHPDs. Consider the entire inventory of dams that have potential impacts in the planning area, even if they do not have a hazard potential classification or eligibility for HHPD funding.

Policy Connection: Element C3

Does the plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards?

6.3. Mitigation Actions

A mitigation action is a measure, project, plan or activity proposed to reduce or eliminate current and future vulnerabilities described in the risk assessment. Mitigation actions help achieve the plan's mission and goals. The actions to reduce vulnerability to threats and hazards form the core of the plan and are a key outcome of the planning process.

6.3.1. Types of Mitigation Actions

Mitigation actions primarily fall into four categories:

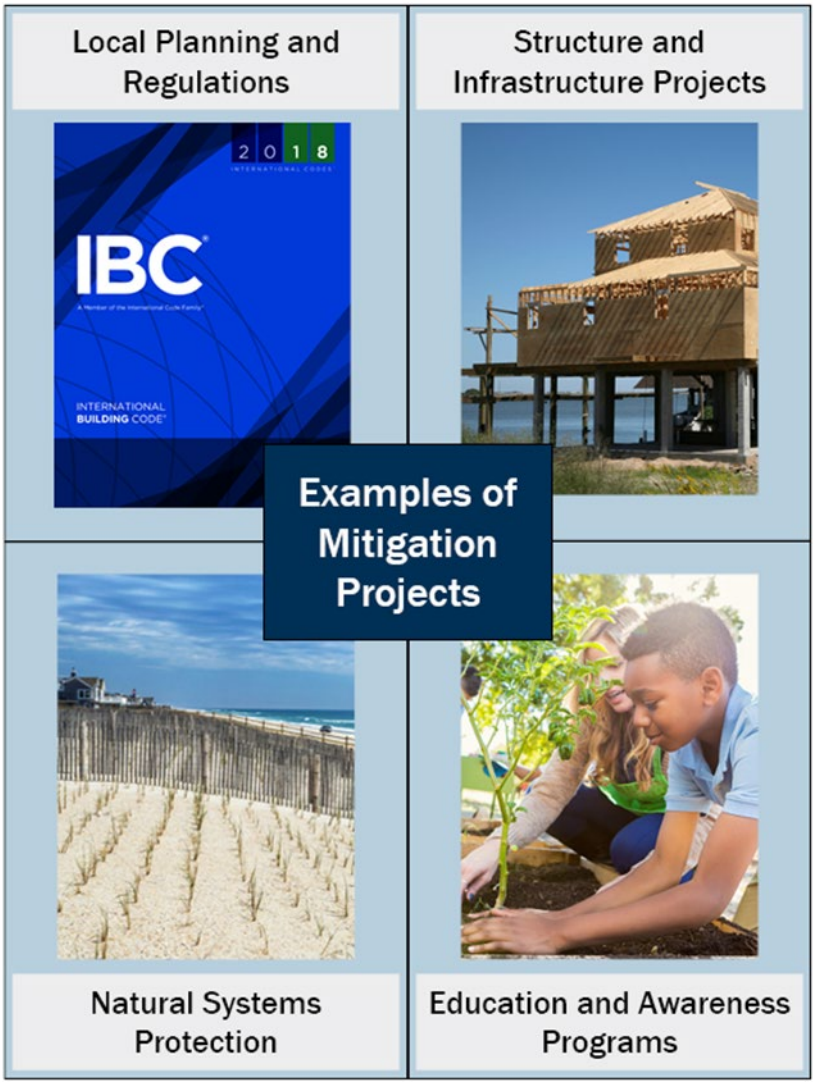


Figure 16: Examples of the four types of mitigation categories

Table 9 describes these types of mitigation actions.

Table 9: Types of Mitigation Actions.

Mitigation Type	Description	Examples
Local Plans and Regulations	These actions include government authorities, policies or codes that	▪ Comprehensive plans ▪ Land use ordinances

Mitigation Type	Description	Examples
	influence the way land and buildings are developed and built.	▪ Subdivision regulations ▪ Development review ▪ Building codes and enforcement ▪ NFIP CRS ▪ Capital improvement programs ▪ Open space preservation ▪ Stormwater management regulations and master plans
Structure and Infrastructure Projects	These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure.	▪ Acquisitions and elevations of structures in flood-prone areas ▪ Utility undergrounding ▪ Structural retrofits ▪ Floodwalls and retaining walls ▪ Detention and retention structures ▪ Culverts ▪ Safe rooms
Natural Systems Protection and Nature-based Solutions	This type of action can include green infrastructure and low impact development, nature-based solutions, Engineering with Nature and bioengineering to incorporate natural features or processes into the built environment.	▪ Sediment and erosion control ▪ Stream corridor restoration ▪ Forest management ▪ Conservation easements ▪ Wetland restoration and preservation ▪ Land conservation ▪ Greenways ▪ Rain gardens ▪ Living shorelines
Education and Awareness Programs	These types of actions keep residents informed about potential natural disasters. Many of these types of actions are eligible for funding through the FEMA HMA program.	▪ Radio or television spots ▪ Social media outreach ▪ Websites with maps and information ▪ Real estate disclosure ▪ Presentations to school groups or neighborhood organizations ▪ Mailings to residents in hazard-prone areas

Mitigation Type	Description	Examples
		▪ Targeted outreach to underserved communities and socially vulnerable populations ▪ Outreach materials in languages other than English

Figure 17: From top left to bottom right: living shorelines, stormwater parks, green roofs, tree trenches, land conservation, and green streets are all examples of natural systems protection projects or actions which can improve mitigation and promote community resilience. These ideas and more can be found in FEMA's Nature Based Solutions Guide.

Case Study: City of Philadelphia

The City of Philadelphia demonstrated a comprehensive identification of mitigation actions in their 2022 hazard mitigation plan update. The results of examining their 2017 strategies against their 2022 priorities are mitigation actions that extensively support the city's risk

assessment, advance climate adaptation and equity, and bridge the transition from planning to implementation.

During the planning process, the city reviewed its mitigation strategy and noted that the actions from their 2017 plan update were mostly focused on post-disaster response. To shift from response to prevention, the city focused on proposing mitigation actions for their 2022 plan that reduced or eliminated long-term risks to hazards. The city held two brainstorming sessions with their steering committee and stakeholders, one focused on infrastructure and the other on nature-based solutions, to come up with mitigation actions. In prioritizing the proposed actions for the plan, the steering committee included scoring criteria for equity and severity of risk that the addressed hazard poses.

The result of this planning process and commitment to make extensive changes as necessary is a comprehensive suite of mitigation actions that support the city's mitigation goals and risk assessment. A total of 73 out of the 331 existing/potential actions from 2017 were removed as a result of the shift from response to mitigation actions. In addition to actions that address multiple hazards, the city includes multiple mitigation actions for a majority of the individual hazards identified in their risk assessment. The city showcases how many actions support each identified hazard and each mitigation goal in a separate table. In support of their 2022 mitigation goals, the city includes mitigation actions that strive towards climate adaptation and equity.

Another new addition to their 2022 plan is the Mitigation in Focus prioritization. In ranking their actions for prioritization, the steering committee identified and ranked 10 high-priority actions. They then collected additional information for these actions, including next steps, potential resources, and equity and resilience outcomes. The purpose of this is to provide a starting point for the city's mitigation strategy containing 163 total actions as they focus on implementation efforts over the 5 years between plan updates. All of the extra steps taken during their plan update provided the city with an all-inclusive, useful hazard mitigation plan and a clear path to implementation.

6.3.2. Identifying Mitigation Actions

The mitigation planning regulation requires each participant to identify and analyze a comprehensive range of specific mitigation actions and projects to reduce the impacts of the hazards each jurisdiction has identified in the risk assessment. Emphasis is placed on the impacts or vulnerabilities identified in the risk assessment, not the hazards themselves. These impacts and vulnerabilities may be summarized in problem statements. Some hazards may not have many impacts, or the impacts may already be mitigated. In this case, fewer mitigation actions may be identified than for a hazard causing more frequent or severe impacts.

Preparedness and Response Actions

There are many types of emergency management activities, including preparedness, response and mitigation activities. However, to meet the federal requirements, the plan must have mitigation-specific actions. You may include your community's preparedness and response actions in this plan, but keep in mind that preparedness and response actions do not meet the federal requirement to identify mitigation actions. The planning team should know the differences between mitigation and other emergency management activities.

Though funding and support may not be immediately available for every action, including the actions in the plan may lead to future opportunities for implementation. Some actions can be undertaken after a disaster when additional funding and political and public support are available (e.g., acquiring homes in a flood hazard area). If actions are not included in the plan, securing funding may be more difficult once it becomes available.

Spotlight on High Hazard Potential Dams

To meet requirement HHPD4, the local mitigation plan must:

- Describe a range of specific actions, such as:
  - Rehabilitating/removing dams.
  - Adopting and enforcing land use ordinances in inundation zones.
  - Elevating structures in inundation zones.
  - Adding flood protection, such as berms, floodwalls or floodproofing, in inundation zones.
- Describe the criteria used for prioritizing actions related to HHPDs.
- Identify the position, office, department or agency responsible for implementing and administering the action(s) related to mitigating hazards to or from HHPDs.

6.3.2.1 INCORPORATE RISK ASSESSMENT FINDINGS INTO THE MITIGATION STRATEGY

Each step in a plan's development builds upon the others. As such, the risk assessment that was developed informs the actions chosen for the mitigation strategy. The actions included must address their specific vulnerabilities identified in the plan.

The plan's risk assessment identified hazards that could affect the planning area and the participating jurisdictions. Any hazard that is important enough to be profiled in the plan must have at least one mitigation action associated with it. Some plans may sort hazards based on a set of

inputs. However, if a participating community, stakeholder or the public wants to include a specific hazard profile, then there must be a mitigation action associated with that hazard

Start by looking at the vulnerabilities listed in the risk assessment. If you have not already developed problem statements that address those vulnerabilities, you may choose to develop problem statements. For each problem statement, consider different mitigation actions to address the identified issue (e.g., structure and infrastructure or education and awareness). Think comprehensively when identifying potential actions. Actions may address more than one hazard and apply to more than one community. For instance, building a storm shelter or safe room can help multiple nearby communities that may not have one themselves. That shelter could also act as a heating or cooling center for extreme temperatures.

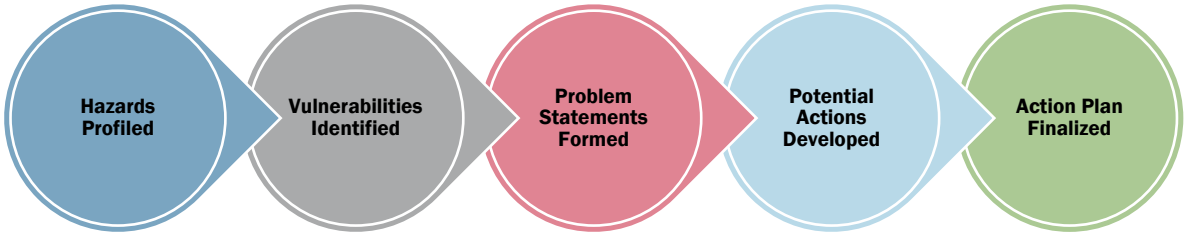


Figure 18: Risk Assessment's Relationship to the Mitigation Strategy

The problem statement in Table 10 shows how a community's wildfire risk can be used to develop potential actions.

Table 10: Example actions developed using a problem statement

Problem Statement	Potential Actions
In wildland-urban interface areas, two critical facilities (school and county maintenance shop), 200 low-income residents, and $500 million in property value are at risk from wildfires. Development pressure is also increasing.	**Local Planning and Regulations:** Adopt a wildfire mitigation ordinance to limit the use and development of wildfire hazard areas to mitigate risk to life and property.
	Structure and Infrastructure Projects: Retrofit the school and the county maintenance shop with fire-resistant construction materials and create a defensible space around the buildings.
	Natural Systems Protection and Nature-based Solutions: Identify large tracts of vacant land in high-hazard areas. The Department of Parks can acquire the land to develop trails and preserve open space.

Problem Statement	Potential Actions
	Education and Awareness Programs: Provide low-income renters and property owners with tools and information about how to protect themselves and their property during a wildfire. If necessary, connect them with funding resources to reduce their risk via physical interventions (e.g., fire-proof roofs, clearing brush and vegetation around buildings, clear signage for evacuation routes).

For certain situations, you may not have enough information to recommend a specific mitigation project. In these cases, consider a mitigation action to further study the issue. For example, if your community has 20 at-risk critical facilities identified in the risk assessment, more study may be needed to select which facilities to address first. Your mitigation action could be, "Conduct an assessment of the 20 at-risk critical facilities over the next 3 years to determine which facilities need to be mitigated first and the most appropriate mitigation actions."

Mitigation Ideas

To find effective solutions, innovative ideas and best practices for mitigating risks, consult the following resources:

- **Ask subject matter experts.** Experts on the planning team and among stakeholders can help evaluate actions that provide long-term solutions. For example, if repetitive flood damage occurs in a specific location, but you are unsure if the flooding is caused by undersized culverts, inadequate storm drainage or debris, you could ask an engineer to evaluate the flooding and recommend potential solutions.
- **Collect ideas from stakeholders and the public.** The outreach strategy is a chance to gather ideas and input from the public. Surveys and questionnaires can reveal alternative mitigation actions that community members would prefer. Another good way to get community feedback is to hold public workshops. Consider providing childcare and refreshments to boost attendance. Make sure to advertise the workshops well ahead of time via newspapers, newsletters, social media, radio advertisements and flyers. Hold these workshops in locations that are:
  - Accessible by public transit.
  - Accessible to persons with disabilities (e.g., ADA-compliant facilities).
- **Research existing guides and resources.** Many publications and web-based resources can help you identify mitigation actions. Some states have prepared technical guides to assist local communities. The state hazard mitigation plan describes state funding sources and priorities for mitigation. FEMA's website includes a Mitigation Best Practices Portfolio with mitigation success stories and case studies from communities across the country.

Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards lists potential mitigation actions by hazard type.

- **Review FEMA HMA-eligible activities.** HMA grant programs provide funding for eligible mitigation activities that reduce disaster losses and protect life and property from future disaster damage. The most recent HMA Program and Policy Guide lists eligible project activities.

6.3.2.2 ANALYZING A COMPREHENSIVE RANGE

The Guide specifies that participants must consider a comprehensive range of actions for the mitigation strategy. Base this analysis on the local participants' needs and abilities. Some plans may choose to use a table format to catalogue the potential actions considered for the plan. Other plans may choose to use a narrative format to explain the process of refining the list of actions to implement. Like much of the rest of the plan's development, the choice belongs to the participants in the planning process. The most important considerations when developing the mitigation strategy may be the process used to choose the actions to carry out from that comprehensive range. That process will vary from community to community.

Comprehensive Range of Actions

A comprehensive range means that communities analyze, or evaluate, different types of mitigation actions. **The plan should focus on each community's capabilities when determining which types of actions to consider.**

This can be done with a narrative, such as:

- If structural projects are too expensive, the plan can say that it will focus on plans and policies or educational and outreach actions.
- If major retrofits to infrastructure are needed, the plan is to focus on those actions.

To support the narrative, the plan can include a full list of actions that were considered. This can then be narrowed down to actions they want to implement.

Remember, your potential mitigation actions need to align with the risk assessment and the capabilities previously identified.

If you find a mitigation action that is not achievable with your current capabilities, this represents a gap. This gap should be identified in the section on how to expand and improve your capabilities. Also, addressing this gap may be a mitigation action in itself.

6.3.2.3 ADDRESS CAPABILITIES

When developing the mitigation strategy, review the capabilities previously identified. The mitigation strategy needs to align with those existing capabilities. For example, if you do not currently have staff

trained in GIS, a mitigation action of "use GIS to map all hazards for use in development decisions" does not make sense. The action would need to be adjusted to address that gap in existing capabilities. The mitigation strategy also looks at the ability to expand on and improve existing tools. As illustrated above, gaps in capabilities can be addressed with mitigation actions. The ability to enhance capabilities through new mitigation actions can also be noted. For instance, can gaps in design or enforcement of existing regulations be addressed through additional personnel or a policy change? Could an existing education program be improved to cover the most significant hazards and better target non-English speakers? Are additional studies, reports or plans needed to understand risk?

Communities participating in the NFIP can look at ways to boost their floodplain management program. They could mitigate high-risk properties and improve standards beyond the minimum NFIP requirements.

Communities can also consider how updates to current growth plans and regulations (e.g., comprehensive plans, zoning and subdivisions ordinances, building codes, and capital improvement programs) impact community safety. For instance, development review procedures may be revised to add a hazard assessment. The types of questions that the community can ask include:

- Will population growth and future land use plans put more people in hazardous areas?
- Will current redevelopment policies increase the population and property vulnerable to hazards?
- Will planned infrastructure extensions encourage unsafe development by giving access to hazardous areas?

6.3.2.4 CAPABILITIES VS. MITIGATION ACTIONS

Keep in mind how capabilities and mitigation actions differ. Once implemented, mitigation actions can become a capability. Participants should create mitigation actions that build on and improve their capabilities. These actions should increase an existing capability or add a new one. Existing, routine capabilities the participants already have are not mitigation actions. This includes ongoing maintenance programs that are already started and on schedule.

For example, standing up a new program to clear debris from a culvert is a mitigation action. It reduces flooding by creating a clear channel for water to flow through. Once this program is up and running, it becomes a tool in the participant's toolbox – in other words, it becomes a capability. Maintaining existing capabilities does not reduce current and future vulnerabilities in the planning area.

Policy Connection: Element C4

Does the plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure?

6.4. Prioritize Mitigation Actions

Not every identified action needs to be included in the final action plan. There may be many reasons to not include an action. Some projects may not be technically feasible, lack political viability or funding, or face other constraints. However, by documenting them in the plan you leave the door open for future use.

The planning team will assess and prioritize the best mitigation actions for the community to carry out.

6.4.1. Cost-Benefit Review

The one criterion that must be part of the evaluation and prioritization process is a benefit-cost review. The planning team must weigh the benefits of a mitigation action against the cost. A full benefit- cost analysis, such as the FEMA BCA Module, is not required. A planning-level assessment of whether the costs are reasonable compared to the probable benefits will suffice. Cost estimates can be based on experience and judgment. They do not have to be exact.

Benefits include losses avoided, such as the number and value of structures and infrastructure protected by the action. Protecting people from injury and loss of life is another benefit. Qualitative benefits, such as quality of life and saving ecosystem function, can also be included in the review.

6.4.2. Criteria for Analysis

Cost-benefit is only one aspect of analyzing actions. As a planning team, think about the other criteria you will use to analyze the mitigation actions. Suggested criteria and sample questions to evaluate each action alternative include:

- **Life and Safety**
    - What impact will the project have on businesses, residences, and properties in the planning area?
    - Will the project proactively reduce natural hazard risk?

- **Administrative/Technical Assistance**
  - Is there sufficient staff to implement the project?
  - Is training required for the staff to implement the project?
  - Is there political support for the project?
  - Does the community have the legal authority to do the project
- **Project Cost and Economic Factors**
  - What is the cost of the project?
  - Does the community have the funds for the project on the whole or the local match?
- **Support for Community Objectives**
  - Does the action advance other objectives or plans, like the capital improvement, economic development, environmental quality, or open space preservation?
- **Equity**
  - Will the action adversely affect underserved and socially vulnerable populations?
  - Does the action build resilience for underserved and socially vulnerable populations?

Advancing Equity Through Action Development and Plan Implementation

Plan implementation requires continued attention on creating equitable outcomes within the planning area for underserved communities, neighborhoods, census tracts and vulnerable populations. Continuing to include underserved and disenfranchised people and their advocates can ensure that actions to increase resilience are built on diverse perspectives.

Think about your community outreach and engagement strategy. Steps taken to ensure equitable outcomes during that phase of the planning process may have included:

- Making materials and meetings accessible, in terms of both the physical environment and delivery methods.
- Providing frequent and varied ways for people to provide input.
- Incorporating what you hear from vulnerable populations in the plan itself.

These same principles should apply to your mitigation action development process. Think about going beyond just a benefit-cost analysis that validates whether or not an action is cost-

effective. Take the time to understand an action's possible impacts and benefits beyond the monetary.

For example, you may choose a mitigation action that elevates homes in the 100-year floodplain. Here, you have a chance to make sure that the funding allocated for this action has the highest possible impact. Instead of simply providing retrofits on a first-come, first-served basis, take a more nuanced approach.

This could mean providing home elevations at no or low cost to the lowest-income homeowners, with tiers of assistance and funding based on household income. You could use a GIS overlay to filter risk exposure based on the socioeconomic status of an area's residents. Then, you can target funding assistance to those with the highest risk. These strategies can help to make sure that the most vulnerable members of your community reach the same level of resilience as everyone else. This is a whole-community approach which benefits everyone in the long run.

6.4.3. Action Prioritization

After careful review, the planning team will have a list of actions that are acceptable and practical for addressing the problems identified in the risk assessment. The planning team can prioritize which actions to begin by assessing the importance of each item relative to the plan's goals and the risks and capabilities. Actions could be prioritized by ranking them as high, medium or low importance. The plan must clearly define each of these terms. Actions may also be prioritized by start date or other methods. Prioritization may change over time as community characteristics, risks and available resources shift. The evaluation and prioritization process helps the planning team weigh the pros and cons of different actions. However, the decision-making process is not necessarily straightforward; it is highly specific to each jurisdiction. The example that follows describes one way to identify and prioritize mitigation actions. Your process should match the size, number and capabilities of the communities involved. Each participant may have different priorities for implementing actions. Annex B includes a worksheet that could be used to facilitate the evaluation and prioritization process (see Worksheet 7: Mitigation Action Selection). The following steps can help you identify and prioritize actions:

Form inclusive and diverse groups of planning team members and/or stakeholders to identify actions to address a set of problem statements from the risk assessment. These could be grouped by hazard or action type.

a. Ask the planning team to pick the criteria and process for evaluating and prioritizing the actions.

b. Present mitigation action alternatives and criteria to the public, elected officials and other stakeholders for feedback and acceptance. Make sure that outreach methods are inclusive and equitable.

c. Develop a worksheet and/or conduct a facilitated process to evaluate the alternatives based on the identified criteria and plan goals.

d. Ask the planning team to vote on or rank their highest priority actions for implementation.

Balancing Mitigation with Private Property Rights

While evaluating and prioritizing mitigation actions, and particularly regulatory activities, it is important to consider any potential impact to the rights or interests of private property owners.

Generally, states give local governments the authority to enact regulations designed to protect the public health, safety and welfare. While many places have regulations to mitigate natural disasters, these powers are not without limitation and may need to strike a balance with private property rights. If a mitigation action raises any such concerns, you should consult with legal counsel.

Policy Connection: Element C5

Does the plan contain an action plan that describes how the actions identified will be prioritized (including a cost-benefit review), implemented, and administered by each jurisdiction?

6.5. Create an Action Plan for Implementation

A common failure of some mitigation plans is that they are never put into action. An action plan lays the groundwork for implementation by describing how the mitigation plan will be incorporated into existing planning mechanisms. The action plan also describes how each jurisdiction will prioritize, carry out and administer mitigation actions.

6.5.1. Integrate Into Existing Plans and Procedures

For local governments to reduce their risks in the long term, the information from the mitigation plan should be integrated across operations. “Integrate” means to include hazard mitigation principles, risk information and mitigation actions into other community plans. When activities are connected they create co-benefits, reduce risk and increase resilience. The planning process forms partnerships. Sustained action makes the community safer from disasters. Many other local plans, such as comprehensive, stormwater management, sustainability and economic development, present ways to address hazard mitigation through multiple community goals. Mitigation plans must describe how the community will integrate the data, analysis, mitigation goals and actions into other planning mechanisms.

First, the plan must identify planning mechanisms where hazard mitigation information and actions may be incorporated. In this context, planning mechanisms mean governance structures used to manage local land use development and community decision making. The review of community

capabilities identifies this information. Multi-jurisdictional plans must describe how each participant will integrate the plan into their local planning mechanisms.

In some cases, a community may choose to integrate and align their hazard mitigation plan within the comprehensive planning process. "Hazard Mitigation: Integrating Best Practices into Planning" provides technical advice and examples of communities that have successfully integrated mitigation into their comprehensive and other planning processes. Some existing processes may not allow for integration due to timing, budgets or other constraints. For example, a community may determine that the goals and actions of the hazard mitigation plan will be considered in the next 5-year capital improvements planning process, which may be updated annually.

Here are a few ways to use the mitigation plan to support risk-informed community planning.

Integrate Plan Goals with Other Community Objectives

Local governments can include the overall goals for risk reduction and safety into the objectives and policies of other plans. Goals for disaster resiliency can also complement local sustainability programs. Mitigation actions can be incorporated into the capital improvement plan, local comprehensive plan or annual budget prioritization process. This can help mitigation projects get funding despite competing local priorities. The following policy examples can be added to a local comprehensive plan. They can be carried out through zoning and building codes, capital improvement programs, and permitting processes:

- Adopt the latest hazard-resistant building code. FEMA has a resource on Building Codes Strategy available online.
- Protect life and property in high-hazard areas by limiting new development.
- Limit the extension of public infrastructure in high-hazard areas.
- Reduce the vulnerability of future development in high-hazard areas by reviewing development regulations.

Use the Risk Assessment to Inform Plans and Policies

The risk assessment provides data, analysis and maps that can be integrated into other plans, including the THIRA, to inform policies and decision making. For instance, the risk assessment can support other community planning and economic development efforts. Incorporating hazard information and mapping into land use plans, zoning and subdivision codes, and the development review process can steer growth and redevelopment away from high-risk locations. This information can also be used to design and site future public facilities to areas with lower exposure to hazards.

Implement Mitigation Actions through Existing Mechanisms

Where possible, the local government should implement the identified mitigation actions through existing plans and policies that already have support from the community and policy makers. For

instance, a Community Wildfire Protection Plan identifies a community's priorities for wildfire fuel reduction projects. A capital improvements program outlines a jurisdiction's spending plan for capital projects that support existing and future developments, such as roads, water and sewer systems. Include mitigation projects in the capital improvements plan, such as strengthening at-risk critical facilities or acquiring open space in known hazard areas. Other tools for carrying out mitigation actions could include staff work plans, permitting procedures, job descriptions and training.

Think Mitigation Pre- and Post-Disaster

Some communities have recovery or post-disaster redevelopment plans that identify the operations and strategies the community will take post-disaster. These plans help communities recover more effectively and become more resilient in future disasters. Mitigation actions to reduce long-term risk, such as effective building code adoption and enforcement, are applied in both pre-disaster mitigation planning and post-disaster recovery. Effective recovery planning builds on existing community goals and plans. It also incorporates the mitigation strategy into long- term recovery and reinvestment decisions.

FEMA has several resources that help local governments decide how and where to integrate the mitigation plan with other planning mechanisms. They include:

- Integrating Hazard Mitigation Into Local Planning: Case Studies and Tools for Community Officials
- Plan Integration: Linking Local Planning Efforts
- Comprehensive Economic Development Strategy and Hazard Mitigation Plan Alignment Guide
- Mitigation Planning and the Community Rating System Key Topics Bulletin

Element D3

Does the plan describe a process by which each community will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate?

6.6. Implement Mitigation Actions

The action plan identifies how specific mitigation actions will be implemented. This information includes who oversees actions, what funding and other resources are available or may be pursued, when the actions will be completed, and how they are prioritized. The capability assessment can help determine the agencies responsible for certain community functions and available funding.

6.6.1. Assign a Responsible Agency

The planning team needs to determine which department or agency will lead each action. At a minimum, this means assigning a specific agency, department or position to each action. It should not be the jurisdiction as a whole. If coordinating with other agencies will be necessary, this is a good time for them to weigh in on the steps and timeframes necessary to carry out the actions.

For multi-jurisdictional actions, the plan must identify the specific agency, department or position that will be responsible for carrying out actions for each jurisdiction.

6.6.2. Identify Potential Resources

Resources include funding, technical assistance and materials. The plan must identify applicable potential funding sources. These funding sources should go beyond generic terms such as "federal," "state," or "local." The identified funding sources must be relevant to carrying out the associated actions. Sources of local funding may include the general operating budget, capital improvement budgets, staff time, impact fees, special assessment districts and more. Your SHMO and FEMA regional partners can help you identify potential state and federal resources. The planning team should also consider private-sector funding and partnerships, as well as resources from academic institutions. Remember these are potential funding sources. The funding you actually use could be different than what is initially identified in the plan. Think of this as the jumping off point. The more specific you are with funding sources, the easier it will be to look into them. Beyond identifying potential resources, describing the internal processes used to prioritize funds to specific projects will help prepare the projects to move forward.

Funding Outside the Box

Participants should think creatively when it comes to funding mitigation. Think about in-kind resources, grants and loans, and local revenue-generating mechanisms. Be sure to consider not only FEMA programs, but other federal, state, local and philanthropic resources.

Just because a funding source isn't specifically for hazard mitigation or resilience does not mean it can't be used that way. Review all funding applications thoroughly and connect with the funder to see if there is flexibility to support potential mitigation projects.

See FEMA's Mitigation Resource Guide for funding resources to consider.

6.6.3. Estimate the Timeframe

The planning team and responsible agencies must develop a timeframe for completing each mitigation action. Funding cycles can affect when you start an action. The timeframe can detail when the action begins, interim steps and when it should be fully implemented. This does not mean start and end dates, but rather how long the project will take once initiated. General terms like "short-term," "medium-term," and "long-term" must be defined. "Ongoing" is acceptable when used

appropriately (e.g., for multi-phased projects). If a project will be ongoing once implemented (e.g., a vegetation management program that has no end date), list the timeframe for the project to be implemented. Then you can note that once implemented, the project will be ongoing.

Plans should have a range of targets for actions, including short-term, medium-term and long-term actions. These targets align with planning mechanisms. For example:

- Short: hazard mitigation planning period, capital improvements, jurisdictions budget cycle.
- Medium: structural projects, planning and regulation, education and outreach, natural systems protection, comprehensive plan.
- Long: comprehensive plan, economic development plan, transportation plan, climate action plan, lifetime of infrastructure assets.

While it is acceptable to include actions that will not be completed within 5 years, the focus of the mitigation strategy should be on the high-priority actions that a jurisdiction wants to carry out within the next 5 years. If an action will span multiple years before completion, consider breaking the action down into phases, sub-actions or more feasible projects for the community.

Other implementation items to consider describing in the action plan are goals addressed, partner agencies, steps for implementation and estimated budget. Partner agencies could include:

- Non-profit organizations that work with underserved communities and socially vulnerable populations.
- Faith-based groups.
- Housing authorities and advocacy groups that work with unhoused populations, renters and low-income homeowners.
- Environmental groups and watershed stewardship organizations.

Although it is not required, estimating the cost of an action will help the planning team target the most appropriate resources. The team can also begin to budget for a local match, which many grants require.

An action implementation worksheet can be a good approach for formatting the information collected for each action and how it will be carried out. An example is provided in Worksheet 8: Mitigation Action Implementation. The planning team may decide to assign the responsible agency for each action first. Each agency can then complete the action implementation worksheet with information on how the action will be done. If appropriate, the community can also begin developing project SOWs, schedules and budgets, particularly where federal funding applications are anticipated. FEMA's approval of the plan does not mean funding identified in the plan is also approved, or equate to an approved application for federal assistance.

6.6.4. Communicate the Mitigation Action Plan

Consider how to present the final mitigation action plan in a format that community members and officials can easily use. The mitigation strategy, or action plan, is the heart of the plan and the primary tool to get funding, assign priorities, guide decisions, and track progress in future plan updates. A matrix can be a good way to summarize information on the recommended actions. You also may consider including this information along with the mission and goals as an executive summary at the front of your plan. This allows users to quickly see how the community wants to reduce risk and strengthen disaster resilience. The matrix may include column headings such as:

- Action ID and Goals.
- Hazards Addressed.
- Description.
- Prioritization (High, Medium, Low).
- Timeframe (required).
- Responsible and Coordinating Bureaus and Agencies (required).
- Potential Funding Sources and/or Agencies (required).
- Benefits.
- Costs.
- Technical Feasibility.

Element C5

Does the plan contain an action plan that describes how the actions identified will be prioritized (including a cost-benefit review), implemented, and administered by each jurisdiction?

6.7. Update the Mitigation Strategy

One of the most important steps in developing your plan is to refine the community's mitigation strategy, particularly in light of experiences gained from implementing the previous plan. To continue representing the jurisdiction's overall strategy for reducing hazard risk, the updated local mitigation plan must reflect current conditions and progress made in mitigation efforts. The 5-year plan update allows each jurisdiction to assess its previous goals and actions, evaluate the progress of the action

plan, and adjust actions to address current realities. The mitigation strategy should also be reviewed after a disaster to see if the recommended actions are still appropriate.

6.7.1. Describe Changes in Priorities

An updated plan must describe if and how any priorities changed since the previous plan. Your community's mitigation priorities may change over time for many reasons. Addressing these changes allows you to redirect actions to reflect current conditions, including financial and political realities, or changes in conditions or priorities following disaster events. Also, now that the community has implemented some actions, you can apply lessons learned about what worked and what didn't.

New actions should be identified based on the updated risk and capability assessments. Prioritize new actions and any actions carried forward from the previous plan. Factors that may lead to changes in priorities include:

- Altered conditions due to disaster events and recovery priorities.
- Changing local resources, community needs and capabilities.
- New state or federal policies and funding resources.
- New hazard impacts identified in the updated risk assessment.
- Changes in development patterns that could influence the effects of hazards.
- New partners that have come to the table.
- A different method of prioritizing actions compared to the previous plan.

Changes in a community's priorities do not always directly relate to how a plan prioritizes mitigation actions. For example, a change in priorities could include:

- New or modified plan goals compared to the previous plan.
- New hazards or removal of hazards that are no longer profiled in the updated risk assessment.
- The removal of mitigation actions from the plan update after a change in political or community support, changes in hazard exposure, or a lack of financial ability to execute the action.

If no priorities have changed, plan updates should validate the information in the previously approved plan.

6.7.2. Evaluate Progress in Implementation

Plan updates must reflect progress in local mitigation efforts. While goals may not change significantly over 5 years, completing mitigation actions and integrating the plan into existing planning processes shows progress in risk reduction.

Completion of Mitigation Actions

The plan must describe the status of all mitigation actions identified in the previous plan. The plan should list whether they have been completed or not. For actions that have not been completed, the plan must either describe why the action is no longer relevant or indicate that it is included in the updated action plan.

The planning team will ask the local agencies and departments responsible for each action in the previous plan to give a status update. For instance, agencies could provide information about the following:

- If the action was completed, did it have the intended results? Did it achieve the goals outlined in the plan? What factors led to success?
- If the action was not completed, what were the barriers? Was there a lack of political support, funding, staff availability or another obstacle? Should the action be included in the updated mitigation strategy?
- When actions are completed, consider highlighting some key projects. This is a great opportunity to illustrate how the community is reducing risk.

Previous Integration of Hazard Mitigation Into Planning Mechanisms

An updated plan must explain how the jurisdiction(s) incorporated the previous mitigation plan, when appropriate, into other planning mechanisms over the last 5 years. This demonstrates progress in local mitigation efforts. As plans and mechanisms are developed and updated within each participating jurisdiction, the plan's information should be integrated into those external documents. The plan update must then highlight the planning mechanisms where the previous plan was integrated, and what information was integrated.

Policy Connection: Element E2

Was the plan revised to reflect changes in priorities and progress in local mitigation efforts?

The following recipe card presents ways to showcase the integration that occurred over the past 5 years in a jurisdiction's plan update. Each of the previous plan's participants must note the planning mechanisms that were developed or updated based on the previous plan's information. They must

also identify which of the planning mechanisms integrated hazard mitigation elements and what those elements were.

Recipe for Discussing Integration of the Previous Hazard Mitigation Plan

You'll need:

- A collection of the jurisdiction's planning documents and mechanisms.
- A review of the developed or updated planning mechanisms.
- To identify where hazard mitigation was integrated.

Step 1: By reviewing the community's planning documents and mechanisms, first identify which were developed or updated since the previous hazard mitigation plan was adopted.

Step 2: Review the applicable planning mechanisms and note where hazard mitigation elements were integrated.

Step 3: In the plan update, discuss your findings. Include the plans, documents and any other planning mechanisms updated since the previous plan was adopted. Discuss how hazard mitigation was integrated. The discussion could include:

- The integration of the hazards the community is vulnerable to.
- The data and analysis presented in the risk assessment.
- The goals of the mitigation plan.
- Potential projects or actions to carry out in the future.

If the previous plan was not integrated into any of the participants' planning mechanisms, the update must state this and explain why. An example could be that no planning mechanisms were developed or updated after development of the last plan.

Task 7. Keeping the Plan Current

7.1. Plan Maintenance Overview

The mitigation plan is a living document that guides actions. As conditions change, new details become available, or actions progress over time, the plan will need to change to stay up to date. This is called plan maintenance. Key components of this process include:

- **Monitoring:** Tracking implementation of the plan over time.
- **Evaluating:** Assessing how well the plan meets its stated purpose and goals.
- **Updating:** Reviewing and revising the plan at least once every 5 years.

During the planning process, there is a lot of interaction among planning team members and other community partners. These interactions create a drive for action. After the plan is finished, that energy can fade. You worked hard to build and foster relationships with both internal and external planning partners; don't let those efforts go to waste! Plan maintenance keeps the plan relevant and up to date. It is also a helpful way to keep community partners and the public engaged, involved and motivated to reduce risk. You should keep engaging with planning team members, partners and the public as you celebrate successes, carry out mitigation actions, and prepare for the next plan update. Sustained maintenance keeps mitigation goals and actions moving forward. It also keeps key stakeholders and partners in the loop. Carrying out a plan maintenance process can:

- Keep up momentum through continued engagement and accountability in the plan's progress.
- Build mitigation into the daily job responsibilities and department roles of community officials and staff.
- Account for changing conditions such as new development, changes in hazard frequency, intensity and types (such as ice and freezing rain instead of snow), or recent disasters.
- Build on the successes of recent mitigation activities.
- Secure funding to implement, develop and update the plan.

Plan maintenance requires an explanation of who will carry out each step, as well as when and how each step will occur. The plan must include the title of the individual, or the name of the department or agency, responsible for the maintenance effort.

7.2. Monitoring

Plan monitoring means tracking how the plan is carried out over time. This includes any progress made on goals, actions, plan integration and public involvement. The plan must identify who will carry out monitoring activities, how these activities will happen, and how often. The plan may define each of these based on what works best for the community.

Regular monitoring can include reports or other deliverables, as well as expectations for maintenance meetings. The coordinator for plan maintenance is often the same person or agency that led the plan's development. Each agency assigned to a mitigation action is responsible for tracking and reporting on each of their actions.

Monitoring meetings do not need to focus only on the mitigation plan. To get the most out of the maintenance process, discuss the plan regularly in existing meetings or processes. This might include regular town halls or when your community uses other plans, such as its comprehensive, budget or recovery plans. This makes monitoring a part of the administrative function of your community.

Why do we monitor the plan? The simple answer is that resilience and risk reduction are ongoing commitments. The mitigation plan is a long-term strategy to reduce disaster losses. Monitoring encourages participants to own their mitigation efforts. It also gives participants a consistent touchpoint for reporting progress and keeps risk reduction top-of-mind.

The most basic monitoring effort asks:

- Are the vulnerabilities in the plan are still accurate?
- Do the mitigation goals and actions still apply to the hazards profiled?
- Are mitigation actions progressing?

Considerations during Plan Maintenance

During your plan maintenance process, it will be time to put your plan into action. Look to your mitigation strategy for which projects you want to implement. Here are some considerations for when you want to implement actions:

- Document how alternative projects were considered and describes the decision-making process for the chosen activity type.
- Discuss what the risks the action will solve and what the benefits will be for the community.
- How does the project solve the problem by itself? Is it one part of a larger solution?

- For high priority actions, develop a scope of work that includes milestones and expected timeframes. This can set up the project early so that it can be quickly implemented.
- As grants become available, review their requirements to make sure the plan aligns with them. This will help maximize funding sources. These may not always be FEMA grants.

Tracking progress on mitigation actions reduces the amount of work it takes to update actions at the 5-year update. Keeping track of actions as they go forward over time is easier than checking the progress of all the mitigation activities completed over a 5-year period during the update.

More advanced monitoring:

- Looks at all aspects of the plan. Taking a holistic view of monitoring makes sure that each section of the plan is up to date and that progress is being made.
- Documents any changes made. This maintains a consistent record of progress made on mitigation activities and can inform the next plan update.
- Highlights success stories. These stories show how valuable mitigation, planning and the resulting risk reduction are to the whole community.

A good, consistent monitoring process can lead to a list of items to update in the next plan. This kind of list can inform the SOW for the next plan update. It can also be a checklist for update priorities. Routine monitoring is key to keeping participants invested in the plan.

Annex B includes an example worksheet for reporting progress on a mitigation.

Questions to Consider

- How are the scheduled meetings to discuss the plan going? Are there any successes to celebrate? Are there any challenges that warrant revisions to the plan?
- Has there been any progress on the actions?
- How has the public, including underserved communities, been involved?
- Is there more that needs to be done?
- Has there been turnover in agencies that oversee mitigation actions? Do new team members know what they need to do? Is there an opportunity to re-socialize the plan?

7.2.1. Evaluating

Evaluating means looking at how well the plan is meeting its goals. This goes a step beyond monitoring; it asks if the plan is serving its intended purpose. It lets the planning team see if any

changes need to be made. For instance, if a goal is to boost public awareness of hazards and risk, conduct a survey once a year to gauge how local residents' perception of risk is changing. This can help show if the actions in the plan are working as intended. The information you collect in this step will be the basis for the plan update.

The planning team can create a list of metrics to measure the progress of actions. Do this in coordination with all local jurisdictions that adopted the plan. Share progress updates on the plan; ask them to do the same. This lends accountability for the maintenance process. Communities are ultimately responsible for determining the success of their planning effort. This may mean evaluating whether identified actions reduced risk, whether the goals and purpose of the plan were accurate, and what stage of implementation each action is in.

The plan evaluation process can establish baseline risk and resiliency metrics to track risk and vulnerability reduction. The plan could then use the baseline data to show cumulative benefits of past (and future) mitigation actions (for plan updates). Over time, the plan can document decisions that increase long-term risk (outside of the five-year planning window), and document losses avoided from natural hazards that occurred since the plan was updated and addresses what losses occurred that the plan did not cover.

The planning team may develop a schedule for both regular meetings and specific deliverables. To make the best use of funding opportunities, schedule the meetings to line up with an existing process. This can include the community budget cycle or FEMA's annual grant cycle. If reports or other deliverables are needed, figure out their frequency and reporting requirements.

There is no set timeline for evaluation. A plan can be evaluated at any point in its lifecycle. This may be on a longer cycle than plan monitoring since results can take time to become clear. Many communities convene the planning team once a year to evaluate the plan's strength and to prepare a progress report for their governing bodies.

It is highly encouraged to carry out a more detailed review of the plan after disasters. These events often reveal vulnerabilities that may not be in the plan. These may also change the priorities of some actions. If major changes to the plan are needed, think about updating the plan earlier than required.

Case Study: Franklin County, Pennsylvania

Franklin County, Pennsylvania, faces many hurdles in mitigation planning. The planning area includes both rural and urban communities, as well as both agricultural and mountainous terrain. The county also lacks resources. This makes it crucial to build and keep up strong relationships with planning partners and community members.

To address these challenges, Franklin County planners invited both community representatives and non-traditional partners to take part in creating the multi-jurisdictional hazard mitigation plan.

Beyond just informing the plan's development, involving a diverse group of stakeholders helps to carry out mitigation actions. It creates buy-in and support for mitigation projects.

Each participating community conducted its own risk assessment. This grounded the plan in local knowledge. The participating jurisdictions also reached out to FEMA Region 3 and the Pennsylvania Emergency Management Agency to help. They provided tools and guidance throughout the planning process. The combination of local know-how, state guidance and federal technical assistance addressed the unique circumstances and mitigation needs of each community, as well as the county.

After the plan was finished, Franklin County incorporated the information into other community plans, including:

- The Franklin County Emergency Operations Plan.
- The Franklin County Department of Emergency Services Strategic Plan.
- Municipal Emergency Operations Plans.
- School District Emergency Operations Plans.

This plan integration process streamlines planning efforts. It reduces duplication of efforts and aligns planning priorities and actions. It also improves interagency communication.

Questions to Consider

- Where are you in terms of reaching your mitigation goals?
- Are the goals and objectives of the plan still relevant?
- Has the level of risk or impacts changed since the last update?
- What is the status of your previous mitigation plan? When does the plan expire? Did your jurisdiction adopt the plan?
- Are there enough resources (funds, people or programs) to carry out the plan?
- What outcomes can you reference to show progress? Were any of them different from what you expected?

7.2.2. Updating

Updating means reviewing and revising the plan at least once every 5 years. Keep in mind that the plan expires 5 years after it was approved. During the update process you must follow the whole planning process:

- Convene a planning team and complete stakeholder and public outreach.
- Identify new plans, studies, reports and technical information that pertain to your community's vulnerabilities.

- Validate or update your hazard list.
- Update hazard profiles to include events that occurred since the last plan.
- Validate or update community capabilities.
- Validate or update community assets.
- Update the risk assessment based on the above.
- Update the mitigation strategy based on the new risk assessment.
- Address changes in development and changes in priorities.
- Document and describe the plan update process.

Maintaining the plan annually can make this process easier. If minor updates have occurred throughout the plan's lifecycle, when it comes time to formally adopt the updated plan, you can validate information as needed with fewer major changes. The current plan must explain how the update will take place and who will lead the update process.

Bear in mind that the plan expires 5 years after it was adopted. Leave enough time to complete the update before the current plan expires. It may help to include a schedule of activities that gives you enough time to obtain grant funding, if needed, and to complete the planning process.

The plan can also include procedures to update the plan following a disaster event or that concur with the creation of a recovery or post-disaster redevelopment plan. Your community's vulnerabilities and mitigation priorities often change following a disaster. Public awareness tends to increase, and the demand and support for mitigation often increases following a disaster. You may choose to use these moments to factor mitigation into recovery. This can include rebuilding in ways to improve safety and avoid similar losses in the future. You should also collect data on the hazard and its impacts for future plan updates. If you want to develop a recovery plan prior to a disaster, aligning the recovery and mitigation planning efforts will unite your messaging about building resilience.

Think about the following questions:

- How has the planning area changed since the last update, including assets?
- What worked well for the planning process last time?
- What might need to change?
- Are there other stakeholders or members of the public you can engage?
- What new data would be most helpful to inform the plan update?
- Have there been any recent major disaster events?

Table 11: Example Plan Maintenance Schedule

Plan Maintenance Step	When	How	Who
Monitoring	Twice per year.	Get status updates on mitigation actions, compile progress reports and identify mid-course corrections.	Emergency Management Director
Evaluating	Once a year or after a disaster event.	Use a standard form to review how the plan has been carried out so far and record lessons learned.	Emergency Management Director, Lead Jurisdiction Planning Department Manager
Updating	Every 5 years, or after a disaster event.	Review the plan and update it as necessary. This may mean hiring a contractor to perform a more in-depth update process.	Emergency Management Director, Lead Jurisdiction Planning Department Manager

Policy Connection: Element D2

Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a five-year cycle)?

7.3. Continue Public Involvement

Keeping the plan current also means continuing to give the public ways to be involved in the plan and how it is carried out. The plan must describe how you will continue to seek public participation after the plan has been approved.

There are many ways to keep the public involved. Public meetings are a great way to engage residents. Think about if there are any groups in your community that do not normally take part in the public process. If you find that they are not being engaged, you may need to think about how to best reach them. There may be other departments, nonprofits or agencies that already interact with them. These groups can help you reach out to sectors of the public you can't normally reach. Social media can be another strong tool. Think about using occasional posts and polls to ask the public about risks.

Linking your planning efforts can help the public know what mitigation is and why it is vital. Look for existing meetings that the community often attends. This awareness will help the public and leaders use the mitigation plan in other community initiatives. Regular plan upkeep will keep planning efforts current.

Think about how your community members give feedback on public processes. Use these ways to talk about mitigation and get feedback on areas of concern. Examples of outreach methods include:

- Presentations on the plan's progress.
- Annual questionnaires or surveys. Consider innovative ways of distributing these surveys, such as by:
    - Setting up a booth at a large public event like a farmers market, holiday parade or festival.
    - Sending out surveys with utility bills.
- Public meetings.
- Social media.
- Interactive websites.

Document any public involvement that does occur. This can be added to the next version of your plan.

Case Study: Virginia Coastal Resilience Master Plan Interactive Website

The Virginia Department of Conservation and Recreation developed an interactive website to complement the Coastal Resilience Master Plan. The website features an interactive map viewer where users can see how sea level rise might affect their neighborhood. This helps to keep residents and planners aware of future coastal flood hazard exposure so they can make informed decisions about mitigation actions.

Beyond showing the future geographic extent of coastal flooding with sea level rise, the website goes a step further. It offers a visualization of where future coastal flood exposure is expected to affect the Commonwealth's most vulnerable populations and assets. This can help community-level planners prioritize mitigation actions where they are most needed.

The website also features a detailed overview of current and proposed resilience and mitigation actions throughout the Commonwealth's coastal areas. It shows users where the proposed projects are located. It also provides details about how much each project is anticipated to cost, potential funding sources, which flood hazards the actions address, and more.

This website was created as a state-level resource and features data at the local and regional level. Local mitigation planning teams can use a similar resource available in their state.

Policy Connection: Element D1

Is there discussion of how each community will continue public participation in the plan maintenance process?

Task 8. Review and Adopt the Plan

8.1. Review of the Plan

8.1.1. Local Plan Review

When you have completed a final draft of the plan, sharing it for public feedback is the next step. It may also be a good idea to publish individual sections of the plan, as completed, and hold listening sessions to get input and feedback. Breaking the plan into manageable chunks will make it easier for the public to understand and provide feedback. This can also help to get real-time feedback, rather than waiting for the entire plan to be completed. The planning team can ask stakeholders and the public to review and submit comments for the team's final consideration. If asked to do so, the state and FEMA can also provide feedback to make the review and approval process faster, with fewer required revisions at the end of the planning process.

A good approach provides the public with enough time to comment and explains how comments will be used. Your approach should also make sure the public knows how the plan will impact their community. Let your partners and the public know about this chance to comment early in the process. The public comment period needs to happen before you send the plan to the state and FEMA for official approval.

You may also directly inform certain stakeholders of the comment period through an email or letter. This is a good way to give neighboring jurisdictions outside of the planning area an opportunity to review the mitigation plan. Keep in mind that neighboring jurisdictions should be involved throughout the planning process, rather than just being given a chance to comment at the end of the plan's development. Sending targeted messaging about the public comment period to representatives of underserved groups and socially vulnerable populations and their advocates is a best practice. Summarizing the types of comments received and how they were incorporated acknowledges their usefulness and encourages future input.

Before sending the plan to the SHMO, the planning team should make sure it meets all the requirements stated in The Guide. FEMA uses the Plan Review Tool to ensure plans meet these requirements. Review the regulation checklist in the Local Mitigation Plan Review Tool and fill in the sections or page numbers to show where your plan meets each required element. This can be a final internal review before submitting it to the state. Annex C provides a copy of the Local Mitigation Plan Review Tool.

You Have a Mitigation Plan. Now What?

- Have all members of the planning team reviewed the final plan?
- Have community partners and stakeholders reviewed the final plan?

- Have you given the public an opportunity to review and comment?
- Have accountability measures been identified to implement the plan?
- Have you vetted and included comments from stakeholders and the public?
- Can your jurisdiction adopt the plan now or begin planning to adopt to expedite approval?

8.1.2. State Review

Once the planning team is sure the plan meets the required elements and includes all supporting documentation, send the plan to your SHMO or State Mitigation Planner. Include all supporting documentation related to the planning process and other components of the plan. Incomplete plan submittals can delay plan approval. The state will review the plan and work with you on any revisions required for approval. Don't forget to provide information on how you can be reached for any questions.

8.1.3. FEMA Plan Review

Once the state is satisfied that the plan meets the requirements, the SHMO will send the plan to the FEMA Regional Office for review and approval, unless the state has been given local plan approval authority. FEMA will conduct its review within 45 days, if possible. FEMA will then give the state a completed Local Mitigation Plan Review Tool. The FEMA Regional Office and the state may contact you if revisions are needed to meet the federal regulation and policy requirements. If revisions are required, you may request a technical assistance call with FEMA to talk through the required revisions. Once the plan meets the regulations, FEMA will notify the SHMO that the plan is approvable pending adoption (APA) and will send you a letter (hard copy and email) notifying you the plan's status is now APA. If the community has already adopted the mitigation plan, FEMA will consider it approved. Figure 19 shows the plan review and approval process, and how to adopt the plan prior to state and FEMA review.

8.2. Plan Adoption

Adoption by each participating local governing body shows their commitment to carrying out the mitigation strategy. Responsible agencies can also begin to carry out their actions. The final plan is not approved until each participant, including each special district, adopts it. You must provide FEMA documentation of formal adoption by the governing body of the jurisdiction(s) requesting approval before your plan can be approved. Annex B includes an example of a local adoption resolution. Adoption is not just required; it's critical to success. Plan adoption:

- Requires the buy-in of elected officials.
- Sets roles and responsibilities for carrying out the plan.
- Is one of the eligibility requirements for FEMA's HMA and HHPD grant funding.

Policy Connection: Element F1

For single-jurisdictional plans, has the governing body of the jurisdiction formally adopted the plan to be eligible for certain FEMA assistance?

8.2.1. Multi-Jurisdictional Adoption Considerations

For a multi-jurisdictional plan, each jurisdiction seeking plan approval must adopt the plan. Typically, the jurisdiction leading the effort adopts the plan first. However, adoption can occur in any order. The governing bodies are typically the Town Board, City Council, County Commissioners and/or Board of Selectmen. Participating Special Districts must also adopt as part of the approval process. Plan adoption usually happens through a formal resolution. However, council minutes, consent agendas or other forms of adoption are acceptable if allowed by local law.

It is a good idea to get buy-in from each plan participant early in the planning process. Getting letters of commitment is one method that, if used early in the process, can support multi-jurisdictional adoption.

Policy Connection: Element F2

For multi-jurisdictional plans, has the governing body of each jurisdiction officially adopted the plan to be eligible for certain FEMA assistance?

Note on Non-Participating Communities

Communities that did not participate in the planning process cannot adopt the plan. All communities that adopt the plan need to have actively participated in the planning process. That is why it is so crucial that all communities be a part of the planning process and give meaningful input.

Communities that did not participate in the initial planning process can use the adopted plan to develop a process to opt-in later. Those who do join later must meet certain requirements:

- They must be within the boundaries of, or adjacent to, the planning area.
- If the state and FEMA agree to add the new jurisdictions, those jurisdictions must prepare and submit the plan to the state and FEMA.
- The revised risk assessment must include an analysis of natural hazards that could affect the added jurisdictions.

8.2.2. All Adoption Resolutions Submitted with Plan

The Guide gives two paths to adoption. The first is that plans can be submitted with adoption resolutions from all participants. In this path, participants adopt the plan once it's been drafted in accordance with the most up-to-date FEMA planning policies, but prior to state and FEMA review. This path has fewer steps and less back-and-forth correspondence. Participants can continue the planning process's momentum to adopt the plan and finish the process while it is top of mind. They could even use a public review period to collect adoptions prior to submitting the plan for review. Once the state and FEMA review the plan and find no required revisions, the plan is complete and the participants can begin the mitigation actions.

The potential risk of this path is that the state and FEMA could return the plan with required revisions. This means the document the participants adopted may differ from the final approved plan. To reduce this risk, use flexible language in the adoption document and let participants know about any changes to the final plan. Flexible language can allow the approved plan to vary slightly from the adopted version. Keeping participants informed of changes can help them gauge if they are comfortable with them.

For instance, participants may be okay with minor changes to the document, such as including a new hazard extent chart or more disaster declarations. They may not feel they need to re-adopt the plan if edits are small. However, if participants are responsible for many new actions, or a hazard profile is added, they may want to re-adopt the plan because it is further from the original.

To take this path, the plan has to be a complete document. Participants should not adopt the plan prior to participating in the process and reviewing the full plan. Adopting participants must have:

- Participated in the process.
- Contributed their local knowledge.
- Identified their risks and vulnerabilities.
- Identified their capabilities and ways to expand them.
- Identified mitigation actions that address those risks and vulnerabilities.

8.2.3. Approvable Pending Adoption

The second path is APA. In this path, the state and FEMA review a complete draft of the plan. Once FEMA determines all requirements have been met, the status of the plan will be changed to APA. This status indicates FEMA will approve the plan as soon as it receives the adoption documentation from the participants. FEMA notifies participants using the APA process that the plan is APA and then all participants adopt the plan.

If you choose to use the APA process, take steps to adopt the plan as soon as possible and submit the documentation to the state and FEMA for approval. Additional steps will be required of jurisdictions adopting after 1 year of FEMA's APA notification.

The plan is not considered approved until at least one of the participating jurisdictions has sent in the adoption documentation. In a multi-jurisdictional plan, each participating jurisdiction must adopt in order to get "approved" status. Approval status is tracked by plan and jurisdiction. Jurisdictions with a plan status of "Approvable Pending Adoption" do not have an approved plan status and are not eligible for any FEMA assistance that requires a mitigation plan.

The benefit of this path is that the participants can be sure they are adopting the final plan. The downside is that there is a break in the timeline from when the final draft plan is completed and when adoption is requested. This break may lead to a loss of momentum in the local planning process. It is important to note that APA status is *not* the same as having an approved plan. Participants still need to adopt the plan as quickly as possible to finish the process and get the benefits of having an approved plan.

Governing bodies have different meeting schedules and procedures for adopting plans and other documents. It is important to coordinate the adoptions of all jurisdictions as soon as the plan receives APA status. If possible, coordinate the adoptions and submit documentation to the state at the same time.

Participating jurisdictions need to adopt the plan quickly after the plan is granted APA status to be eligible for certain kinds of FEMA non-emergency disaster assistance.

Adoption Outside of 1 Year

After 1 year, participants that did not adopt the plan must validate that the plan's content is still correct and applies to them prior to approval.

If the plan content is no longer accurate, participants need to revise the plan and add any new information prior to approval. Once the jurisdiction either confirms the plan is still correct or makes revisions, the state and FEMA will review the documentation for accuracy and approval.

Participants should ask questions like:

- Have there been any recent disasters or severe events?
- Have there been changes in development?
- Have there been any demographic shifts or population changes?
- Have our vulnerabilities to the identified hazards changed?
- Are our capabilities still the same? Have we grown or lost any capabilities?
- Are the actions still appropriate to our community?

- Are the goals still applicable to our community?

Table 12: Considerations for Adoption Paths

All Adoption Resolutions Submitted with Plan	Approvable Pending Adoption
Required Revisions ▪ There may still be revisions necessary before the plan can be adopted. Significant revisions could mean having to re-adopt the plan.	Required Revisions ▪ The plan is approvable at the time of adoption.
Timing ▪ Coordinating adoption among participants can be easier because the planning process is still fresh. ▪ There is no potential lapse in timing because all adoptions are complete before submittal.	Timing ▪ Coordinating adoption among participants can take longer because the planning process may not be as recent. ▪ Participants adopting after 1 year need to complete additional steps to receive approval.

8.3. Plan Approval

Once it receives the record of adoption from the state, FEMA will issue an official approval letter. The letter states which jurisdictions have adopted the plan and are now eligible for FEMA's HMA programs. FEMA will send a final Local Mitigation Plan Review Tool with the approval letter. This provides feedback on the strengths of the plan and opportunities for future improvements.

The plan is approved for 5 years. The approval letter will include the expiration date. The plan expiration date does not change when other participating jurisdictions adopt the plan. It is important to coordinate the adoption process so all participants are covered by the plan for the full 5 years. Plan updates follow the same adoption process as a new plan.

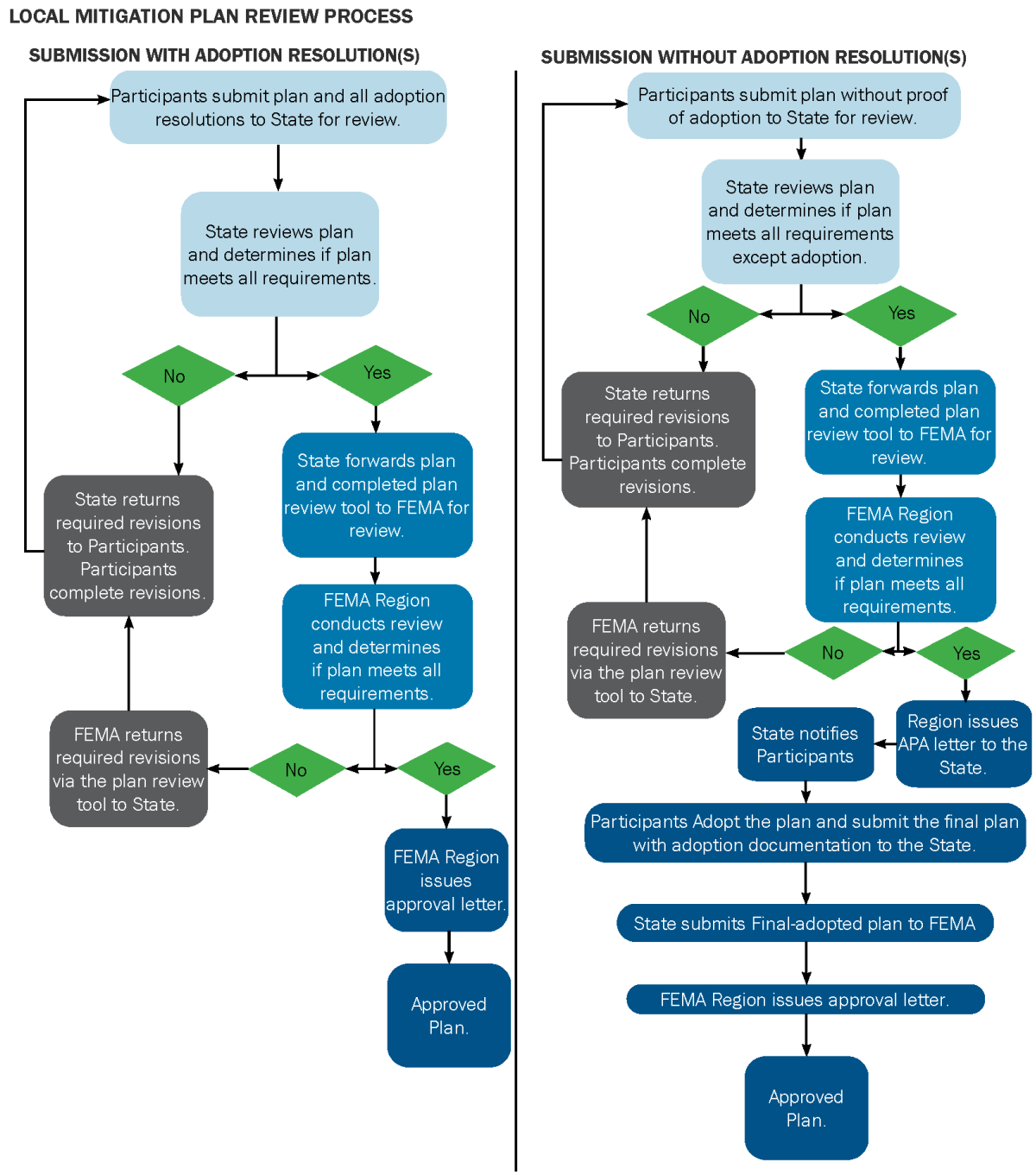


Figure 19: Paths to Local Plan Approval.

8.4. Additional Considerations

Additional considerations related to the plan review and approval process include:

- **Communicate with your SHMO early and often**. Discuss with your SHMO whether it would be appropriate to share drafts or portions of the plan prior to a formal review to ensure the plan is complete.
- **Keep stakeholders informed**. The existing relationships you have with stakeholders, elected officials and government agencies are important assets during the adoption process. To promote adoption of the plan, brief community decision makers on the progress of the planning team's efforts. When presenting the final draft for adoption, invite the planning team to the meeting. Ask supporting agencies to voice their support of the plan.
- **Allow enough time**. Build time into your planning process to meet state and FEMA procedures for review. Developing a scope and schedule for the planning process may involve a long timeframe for review, approval and adoption. Your local governing body may meet only once a month and may require agenda items to be submitted well ahead of time. FEMA gets 45 days to review the plan and require revisions.
- **Make sure that your plan meets any additiona**l state requirements. States may have regulations or requirements beyond what FEMA mandates. Make sure to keep these in mind to avoid any delays. State requirements and the presence of additional requirements vary state by state. These are noted in Element H of the Local Mitigation Plan Review Tool.

8.5. Celebrate Success

Now that the plan is adopted and approved, the work is just beginning. But first, it's time to celebrate! It is a good idea to publicly announce the adoption and approval of the plan. This can raise community awareness of hazard mitigation efforts and reiterate why they are important. Consider getting the word out using multiple methods, such as:

- Post a message on social media platforms about the plan's approval and what that means for the community.
- Propose a congratulatory resolution or achievement award for the planning team (or specific individuals) for their successful work and commitment to making the community safer.
- Post a notice on the community's website with a brief overview of the plan and a link to the final documents.
- Issue a press release on plan adoption and approval to local media outlets.
- Distribute notices of approval to stakeholders.

- Announce the first project(s) to be started.

These and similar steps are easy to complete and are inexpensive. They will keep the plan at the forefront of people's minds, helping to build momentum as you move into implementation.

Case Study: City of Redondo Beach, CA

The City of Redondo Beach's Local Hazard Mitigation Plan includes an Implementation Workbook that will streamline the process of maintaining their plan. This workbook contains worksheets relevant to multiple plan update scenarios. They give instructions and advice for applying for grant funding, integrating the hazard mitigation plan into other municipal plans, and other implementation activities. These worksheets will aid the city in tracking progress made throughout the lifecycle of the plan. They will also provide guidance when it comes time to update the plan.

Task 9. Create a Safe and Resilient Community

Congratulations! Your plan is approved. Now, let's put it to work.

This Handbook has, thus far, helped you develop an approved local hazard mitigation plan. Now that you're done, what comes next?

Think about your mitigation plan as the blueprint for your community's resilience. The same way you wouldn't build a house without detailed plans, your resilience journey will be more successful when you start from the long-term strategy in the mitigation plan and build from there. Task 9 explores what you can do to create a safe and resilient community rooted in your mitigation plan.

There are major benefits to building your community's resilience to short-term shocks and persistent stressors. In a disaster, a resilient community is likely to suffer fewer casualties; see less damage to homes, businesses, assets and property; and have lower recovery time and costs. Investment in resiliency efforts can improve public health, boost income and employment and attract businesses, residents and visitors which directly affect the health of a community.

9.1. What Is Resilience?

The Guide defines community resilience as:

> "The ability of a community to prepare for anticipated hazards, adapt to changing conditions, and withstand and recover rapidly from disruptions. Activities such as disaster preparedness (which includes prevention, protection, mitigation, response and recovery) and reducing community stressors (the underlying social, economic and environmental conditions that can weaken a community) are key steps to resilience."

Within this broad definition, there are steps that can help you build community resilience. As you plan for and carry out resilience measures, build in equity and future conditions as cross-cutting themes. We'll discuss these steps, themes and ways to carry them out below.

9.2. Role of Local Officials in Resilience

Communities face any number of natural hazards based on where they are and how they were developed. The local emergency manager often leads the response to and recovery from disasters resulting from natural hazard events. However, local municipal officials also play a key role in local resilience.

Municipal officials make important decisions before, during and after disasters. Plans and policies will directly inform how a community is able to mitigate, prepare, respond and recover. Local

leadership are responsible for making sure these capabilities, plans and policies are put in place, exercised and maintained. They also keep plans and policies current, relevant and reflective of the community. Our local officials are advocates for long-range planning, collaborative community engagement, education and information sharing, and responsible fiscal management. This will ensure resilience initiatives get the resources they need.

After a disaster, local officials may work with the private sector and other government organizations to assess gaps and assign scarce resources. By working with emergency managers, municipal officials can better know the community's needs and make informed decisions. FEMA published a Local Elected and Appointed Officials Guide in 2022. It helps convey the role that local officials play in emergency management.

9.2.1. Leveraging Your Partnerships

Partnerships are key to reaching your resilience goals. These goals are often complex, cross-cutting and integrated. They will benefit from expertise within your organization, community leaders, neighboring and regional jurisdictions, visitors, workers and residents. Strong ties with strategic partners across all sectors of your community can improve coordination, promote equitable outcomes and reduce risk.

Focus on solidifying ties with leaders in your organization and community. You likely engaged many of these stakeholders as you developed your hazard mitigation plan. You may have worked with elected officials, economic developers and mapping and finance experts. In your community, you may have worked with school officials, faith leaders, activists, nonprofit groups and other key connectors. This is your core group of resilience champions. Think about whether groups that were not involved in hazard mitigation planning (e.g., transportation planners, local businesses) can add to your resiliency efforts.

Create a Resilience Committee

One way to formalize resilience partnerships is to create a resilience committee or task force. Members could be appointed by the local governing body. These members would come from a range of disciplines (emergency management, community planning, health and social services, housing, transportation, economic development, etc.). Target your outreach efforts to include all viewpoints.

As an advisory committee, members should be a core part of planning and carrying out resilience. The committee may strengthen the community's resiliency and emergency preparedness process. It may engage stakeholders, give residents the tools to act during an emergency, or spark dialogue between critical facilities and the community. It may also play a key role in long-range planning, grant development or other projects that move resiliency efforts forward.

9.2.2. Involve the Whole Community

Developing and keeping up community relationships means conducting strategic outreach. Historically, underserved communities and socially vulnerable populations have been left out of mitigation conversations and efforts. As a result, a subset of the population is at increased risk and more vulnerable to hazards.

Whole-community involvement throughout the planning cycle benefits everyone. It improves the planning process, the plan itself and how you carry out mitigation actions. Data analysis and mitigation planning are both key components of a strong mitigation plan. Still, do not overlook the value that comes from a community's lived experiences. Locals may know a place that floods often but isn't shown on the flood risk maps. Neighbors may have their own ways to communicate hazard risk to friends and family if there is no early warning system. Community social networks are often a lifeline, especially in low-income and underserved communities. You should use them to ensure you factor those residents, groups and areas most at risk of hazard exposure into the process. While there is no "one-size-fits-all" plan, one that reflects the whole community it serves will succeed in the long term.

Involving local partners can also boost a community's interest in, and buy-in for, the mitigation plan. The process can open new communication channels among underserved groups, the planning team, other departments, and local leaders that will build mutual trust and strong ties. When all members of a community have a voice in the process and a way to communicate their challenges, local leaders can better target assistance to those who need it most.

To ensure that all members of the community have access to current information and resources, communicate early and often throughout the planning process. You can do this by:

- Creating and using a network of nonprofits and community-based organizations for contact lists.
- Sending out regularly scheduled updates on the mitigation planning progress. You can use both new and established newsletters and listservs.
- Working with local news outlets to give periodic interviews or write about mitigation planning updates.
- Holding regular public meetings about mitigation and community-based resilience. You can make these more accessible by providing translators or ASL interpreters, as well as offering a virtual or hybrid option. Refer to section 4 of FEMA's State Mitigation Planning Key Topics Bulletins: Planning Process document for more information on planning for virtual or hybrid meetings.
- Ensuring all public mitigation planning documents and schedules are accessible to a wide audience. You can publish them online and promote their release through social media. For those without internet access, consider distributing hard copies of planning documents during public meetings or posting them in publicly accessible locations.

9.2.3. Plan Holistically

9.2.3.1 INVEST IN A LONG-RANGE PLAN

A long-range plan, commonly referred to as a comprehensive plan, is meant to serve as a community blueprint for the next 20 to 25 years. The local governing board decides whether to use a long-range plan. Some states mandate this type of plan, while others let the jurisdiction choose. To ensure the plan reflects the community it serves, the governing board should establish a steering committee. It should include residents and representatives to bring a local perspective to the process.

Long-range plans assess your community's existing conditions. They set goals and objectives. They also outline key action items that are supported by a strong vision statement. Engaging the community is a key part of any long-range plan. Residents and businesses contribute to defining a vision for the future of their community. Participatory visioning creates ways to define the community's values, challenges and opportunities. You can do this through targeted outreach and trust-building activities, such as focus groups, design charrettes and open houses. Outreach may require the planning team to go directly into the community. Meeting residents where they are will likely lead to strategies that are both actionable and achievable. This will help reach your community's resiliency goals.

You should also think about how your community might change over time. Find data on external changes, like climate and economic trends. Think about how your community can reach its goals in light of these future changes. Your policies and projects can guide development away from at-risk areas and toward safer areas and methods of construction.

Long-range plans give a baseline assessment of your entire jurisdiction (village, town, city, county, etc.) The plan lays out your community's existing conditions, vision, goals and policies for future growth and development. It should serve as an organizing framework for other targeted plans and studies, including the mitigation plan. It can also be a framework for local land use regulations established through the local zoning and subdivision law. Aligning your plans will be the next step in your community's resilience process.

9.2.3.2 ALIGN YOUR EFFORTS

Your community's long-range vision should inform policies and regulations. Land development codes – such as floodplain development and subdivision regulations – align with your expected future risks. Current minimum code requirements may not be enough to withstand more frequent and severe weather events.

During the hazard mitigation planning process, your community needs to think about other plans and policies. It must also describe how elements of the mitigation plan will inform other planning mechanisms. You may have included a state-level mitigation plan or code; coastal zone management plan; regional strategic plan; or local land use, adaptation or economic development plan. When thinking about how to integrate your plans to support resilience, start building on your understanding of links between planning documents.

As you update your community planning documents, continue to unify goals and align efforts. This is also a chance to strengthen ties with partners across your organization. Your plan is more likely to succeed when you coordinate with partners, value their viewpoints, and put their expertise to use.

Specific projects also offer chances for coordination. Often, resilience and hazard mitigation projects offer co-benefits that are valuable to your partners. Your partners may also introduce new ideas, connect you with key stakeholders, or combine funding to reach complementary goals.

Resources for Holistic Planning

- Plan Integration: Linking Local Planning Efforts
- Integrating Hazard Mitigation Into Local Planning: Case Studies and Tools for Community Officials
- Building Resilience Through Plan Integration
- Increasing Resilience Using THIRA/SPR and Mitigation Planning

9.2.3.3 PRIORITIZE AND PLAN FOR RESILIENCE

Some communities focus on resilience through a dedicated resilience plan. For example, Larimer County, Colorado, and Chicago, Illinois, have this type of plan. These plans document community vision, goals and projects or activities that advance resilience. They also refer and align to previous plans and ongoing initiatives.

Larimer County and Chicago followed different processes to develop their plans. Larimer County started by creating a local steering committee to direct the planning process and carry it out. Its members came from local, state and federal governments; community-led coalitions; nonprofit organizations; and businesses. The committee held two problem-solving workshops with officials from local, state and federal governments, as well as nonprofit organizations. In the first, attendees outlined the community's context and developed a vision, goals and specific strategies for resilience. In the second, they reviewed potential shocks and stresses as well as challenges and opportunities for resilience. The committee used this feedback to draft its resiliency framework.

Chicago created a new, permanent, city-level position for a chief resilience officer (CRO). The CRO led a two-phase process to develop the resilience strategy. Phase 1 involved research, surveys and workshops to learn Chicago's strengths, threats and key challenges. This work also highlighted existing efforts to improve resilience. In Phase 2, the CRO built a steering committee. This involved the public, private, nonprofit and philanthropic sectors. The committee helped to pinpoint the root causes of resilience challenges and potential solutions. The resilience plan, goals and actions grew out of this work.

Other communities integrate resilience as a core value of other plans, including mitigation plans, sustainability plans and long-range plans. The Charlottesville, Virginia comprehensive plan update

(2021) includes resilience as a core goal to address environmental, climate and food equity challenges. While Charlottesville was updating its long-range plan, the city was also developing an affordable housing plan and zoning update. Working on all of these plans at the same time led to integration and alignment.

However you choose to focus on resilience, make sure that you have defined goals and clear metrics to track progress. A measurement framework will help you to identify challenges early. It can also help you highlight successes along the way.

9.3. Assess Your Capacity

Your local capacity and obligations shape your resilience opportunities. Having an accurate grasp of your current capacity will help you to set realistic goals. If needed, an organizational assessment can help build a common understanding of your processes, structure and strengths. This tool may deepen how well you know your organization's direction and goals.

When you define your capacity to build resilience, think about the following:

- Staff. Is there an adequate number of staff members to complete the plan? If so, how much time can staff make for plan development, execution, monitoring and updates?
- Skills. The resilience measures your community takes may depend on whether you have access to mapping support, community relations, engineering or other skillsets.
- Budget. Can you secure and manage funding for planning or carrying out your resilience measures?
- Partnerships. Are there chances for you to work with your organization, within your community, and with neighboring communities or regional bodies?

9.4. Prepare for Future Opportunities

Resources to fund resilience projects can open up unexpectedly; it pays to be ready.

In the weeks and months after a disaster, many communities have a unique window of opportunity. Public support and political will to update policies and invest in mitigation are often stronger. Federal funding for mitigation may also become available. Mitigation and recovery plans that stress resilience can help the community build back in ways that protect people and property against future disasters. Use this time to reassess and carry out actions for a more resilient future.

To take advantage of unexpected or time-limited funding, invest in project preparation. The time spent planning, scoping and permitting these projects before disasters happen can lead to quicker funding deployment and use. Funds may be set aside for grant matching. Planning projects outside

of a disaster cycle can help ensure that they align with and advance community goals to mitigate harm and build resilience.

Deepening ties with state officials is beneficial. The people who apply for and allocate federal grant funds know the criteria state and federal officials use when awarding competitive funds. These ties can increase your access to funding.

9.5. What Does Implementation Look Like?

Several resources can support you as you carry out the plan. They include funding in the form of grants and loans, technical assistance and in-kind contributions. Some projects may require a combination of your local resources, state and federal assistance, and nongovernmental support. Refer to Annex A: Resources for Resilience for a list of some resources.

9.5.1. Identify Projects

Once you have established a resilience vision and goals for your community, it's time to put the plan into action. Your projects should grow out of ongoing efforts and any new goals. Think about the mitigation actions you've included in your mitigation plan. Many of these will also build whole-community resilience; think about focusing on these actions.

After defining a set of resilience projects, you can look for resources and start to define timelines. As in the mitigation plan, make sure that all projects have a designated agency or point of contact that will carry them out. Lay out how your projects connect to your resilience goals. This will help you to describe and measure how projects advance your goals and vision. A formal measurement plan will also support the periodic review of active and planned projects. Such reviews should take place on an annual basis. Use these reviews to check whether projects are aligning with their goals, identify challenges and successes, and think about whether to add new projects or priorities.

9.5.2. Develop and Leverage Momentum

As you plan the projects that will support the resilience plan, think about starting with a couple of affordable, visible and simple projects. As you complete these, they will show a "win" for the community. They will promote more resilience buy-in. Completed projects also show a commitment to resilience goals. This may increase the availability of future funding.

Many grant and loan sources require a cost effectiveness calculation. This may be a challenge for resilience or mitigation projects that are meant to withstand future disasters. It may be hard to justify higher costs for benefits that may not be seen for several years. Often, you can address this by factoring in and documenting short-term benefits.

For example, the main goal of a living shoreline project may be to protect properties against storm surge from projected higher sea levels in 2040. However, as soon as the project is done, it may boost tourism, create habitats for wildlife, and provide air and water filtration.

Individual funding sources may not always provide enough project resources. Sometimes, your community may not have the funds to meet a local match percentage. In these cases, you might be able to combine multiple funding sources. For instance, some communities use funds from the Department of Housing and Urban Development's Community Development Block Grant program to meet cost-share requirements for FEMA HMA grant funds.

Annex A. Resources for Resilience

1. Local Resources

First, find out if any initiatives and activities can be done using existing operations and budgets. For example, small infrastructure projects such as stormwater drainage improvements can likely be factored into your community's capital improvements program. Other projects may require a specific line-item request as part of the routine planning and budgeting cycle. They might also require more creative public financing methods, such as special purpose assessments, impact fees or tax increment financing.

Some actions may use a combination of funding sources with other local departments, such as those that can lead to multiple benefits for the community. For example, multiple agencies may work on and fund the acquisition of flood-prone properties to be maintained as a public park.

2. State Resources

State government funding for mitigation varies from state to state. HMA funds may be available following a federal disaster declaration, as described below; some states use their own general funds for grant matching. Reach out to your SHMO to learn about available funding opportunities in your state. Other state agencies, such as your state forestry department, geological survey and water resources agency, may also offer programs that fund projects for specific hazards.

Get to know your SHMO. They are in charge of organizing, developing and carrying out the state's hazard mitigation program. They also review plans and projects submitted for approval by local communities. Your SHMO regularly coordinates with other state agencies; FEMA and other federal agencies; local governments; and other public and private organizations. They monitor the completion of approved projects. They provide technical assistance and grant funding for approved activities and expenses. Your SHMO coordinates most FEMA funding to support mitigation plans and project execution.

3. Federal Resources

3.1. FEMA Mitigation Grant Programs

HMA Grant Programs

FEMA's HMA grant programs provide funds for pre- and post-disaster mitigation. These programs reduce the risk of loss of life and property due to natural hazards. Here are brief descriptions of the HMA grant programs:

- Building Resilient Infrastructure and Communities (BRIC). This program gives resources to communities for hazard mitigation projects. With funds to address future natural disaster risk, communities can build their resilience.
- Flood Mitigation Assistance. This program gives funds on an annual basis. Communities can use these funds to take measures that reduce or eliminate the risk of flood damage to buildings insured under the NFIP.
- Hazard Mitigation Grant Program. This program assists in carrying out long-term hazard mitigation measures following presidential disaster declarations. Funding may be authorized to carry out projects in accordance with state, tribal and local priorities.
- Safeguarding Tomorrow Revolving Loan Fund. This program provides seed funding for states to set up mitigation revolving loan fund programs. These programs provide low interest loans to jurisdictions to reduce vulnerability to natural disasters, foster greater community resilience and reduce disaster suffering.
- The Rehabilitation of High Hazard Potential Dams (HHPD) grant program provides technical, planning, design, and construction assistance in the form of grants for rehabilitation of eligible high hazard potential dams.

Hazard Mitigation Funding Under Public Assistance, Section 406

Section 406 of the Stafford Act, 42 U.S.C. 5172, gives FEMA the power to fund cost-effective mitigation measures under the Public Assistance (PA) program while repairing disaster-damaged public facilities. This usually becomes apparent during the immediate repair phase after a disaster event. Your community must be aware and involved in the development of PA projects in close coordination with state and FEMA counterparts. This will help pinpoint possible mitigation opportunities under the PA program.

Earthquake Grants

The FEMA National Earthquake Hazards Reduction Program Earthquake State Assistance Program was created to boost earthquake risk reduction at the local level. Mitigation activities funded through this program include:

- Developing seismic mitigation plans.
- Conducting seismic safety inspections of critical structures and lifelines.
- Updating building codes, zoning codes and ordinances to enhance seismic safety.
- Increasing earthquake awareness and education.

You can learn more about funding local earthquake risk reduction activities. Reach out to your SHMO or State Earthquake Program contact.

Emergency Management Performance Grants Program

The Emergency Management Performance Grants Program gives grants to states to assist SLTT governments prepare for threats and hazards. The grants focus on planning, operations, equipment acquisitions, training, exercises and construction and renovation in enhancing all-hazards emergency management capabilities. Your state emergency management agency is the only entity that can apply to FEMA for this program on behalf of state and local emergency management agencies. So, your first point of coordination should be through your local emergency management office.

3.2. Technical Assistance

FEMA offers many types of technical assistance. Technical assistance may take the form of information resources; publications; training; templates, models and samples; networking; or onsite workshops. As you develop your plan and assess your local capabilities, you will get a sense of what technical assistance might help the most.

BRIC Direct Technical Assistance

Through BRIC Direct Technical Assistance, FEMA gives full support to communities that may not have the resources to begin climate resilience planning and project solution design. Support may include climate risk assessments; community engagement; mitigation and climate adaptation planning; and BRIC program requests throughout the grant lifecycle.

National Earthquake Technical Assistance Program

The National Earthquake Technical Assistance Program is designed to help state, tribal and local governments get the knowledge and tools they need to plan and carry out earthquake mitigation strategies. FEMA provides these types of assistance through the program:

- Training. Courses and associated materials, available for the classroom or independent study, related to a number of seismic risk reduction activities and stakeholders.
- Technical assistance. Technical advice and shared expertise that help recipients design, develop and carry out earthquake mitigation projects.
- Tools development. Help in creating job aids and other tools to carry out earthquake mitigation efforts.
- Special project support. Depending on available program funding, support for demonstration projects or other mitigation initiatives.

Risk MAP

FEMA's Risk Mapping, Assessment and Planning (Risk MAP) program helps communities pinpoint, assess and reduce flood risk. Through Risk MAP, FEMA gives communities flood risk data and information to enhance local mitigation plans, improve community outreach, and increase local

resilience to floods. The products and guidance provided by Risk MAP can be used to help carry out your local plan.

Building Science

FEMA's Building Science provides technical services and mitigation guidance to create disaster-resilient communities. The branch offers NFIP technical support for public and private sector stakeholders, the National Earthquake Hazards Reduction Program, the National Windstorm Impact Reduction Program, and outreach strategies for communicating Building Science issues.

Dam Safety Collaborative Technical Assistance

FEMA is offering a Collaborative Technical Assistance (CTA) series to help communities at risk of dam-related flooding to better understand their risk landscape and the potential consequences of dam-related emergencies. The CTA will include planning for emergencies related to operational discharges or dam-related infrastructure failure.

4. Best Practices

Best Practices Portfolio

FEMA's Mitigation Best Practices consists of stories, ideas, activities and projects that show how others have worked to reduce or prevent damage from disasters. These best practices come from individuals and communities. They describe measures they have taken to reduce the loss of life and property from disasters. The portfolio provides ideas about reducing losses. It also encourages others to assess their own risk and think about mitigation as a long-term way to reduce it. There are mitigation planning success stories on plan implementation, plan integration, outreach, engagement and equity.

Annex B. Worksheets, Samples and Starter Kits

Background

What is in this annex?

You can use the materials in this annex to guide the planning process. These are recommended and are designed to help create a strong plan and meet the requirements laid out in the policy.

There are three types of guidance in this annex:

Worksheets: You can use these forms during the planning process to collect information from participating jurisdictions, community partners or other stakeholders.

Samples: These can be a starting point or template for certain activities of the planning process (e.g. survey).

Starter Kits: These are handouts that explain special topics that can be helpful for the planning process (e.g. hiring a consultant).

All of these are optional and can be edited to suit the needs of your community.

Planning Process

Worksheet 1: Identifying and Engaging the Planning Team

Use this worksheet to identify partner organizations to invite to be on the planning team. Some organizations do not need to be involved in every decision of the planning process but are stakeholders that require outreach and involvement during the planning process.

Planning Team – The core group responsible for making decisions, guiding the planning process, and agreeing upon the final contents of the plan. These are often leaders from the local communities that will adopt the plan (mayors, town administrators, county commissioners, etc.). Every community that wants to formally adopt the plan must participate in the process!

Stakeholders – Individuals or groups that affect or can be affected by a mitigation action or policy. The plan needs to document how each of the following were at least given the opportunity to participate. These kinds of stakeholders must be invited:

- Local and regional agencies involved in hazard mitigation activities.
    - Public works, emergency management, local floodplain administration and Geographic Information Systems (GIS) departments.
- Agencies with authority to regulate development.

- Zoning, planning, community and economic development departments; building officials; planning commissions; or other elected officials.

- Neighboring communities.
  - Adjacent local governments, including special districts. These may include those that are affected by similar hazard events or may share a mitigation action or project that crosses boundaries. Neighboring communities may be partners in hazard mitigation and response activities. They may be where critical assets, such as dams, are located.

- Representatives of businesses, academia and other private organizations.
  - Private utilities or major employers that sustain community lifelines.

- Representatives of nonprofit organizations that work directly with and/or provide support to underserved communities and socially vulnerable populations, among others.
  - Community-based organizations, housing authorities, healthcare organizations or social service agencies.

Use the checkboxes in the table below to identify which methods are best for each type of participant and stakeholder. Consider your unique situation. No two communities are exactly alike. Identify what works best for you and your partners.

Contact method	Participating jurisdiction	Local and regional agencies involved in hazard mitigation activities	Agencies that have the authority to regulate development	Neighboring communities	Representatives of businesses, academia, and other private organizations	Organizations that work with underserved communities	General public
Email	☐	☐	☐	☐	☐	☐	☐
Phone call	☐	☐	☐	☐	☐	☐	☐
Flyers/ newsletters	☐	☐	☐	☐	☐	☐	☐
Website	☐	☐	☐	☐	☐	☐	☐
Existing regular meetings	☐	☐	☐	☐	☐	☐	☐
Surveys	☐	☐	☐	☐	☐	☐	☐
Social media	☐	☐	☐	☐	☐	☐	☐
Local newspaper	☐	☐	☐	☐	☐	☐	☐
Other (describe)	☐	☐	☐	☐	☐	☐	☐

What are your expectations for plan participant involvement for each phase of the plan update?

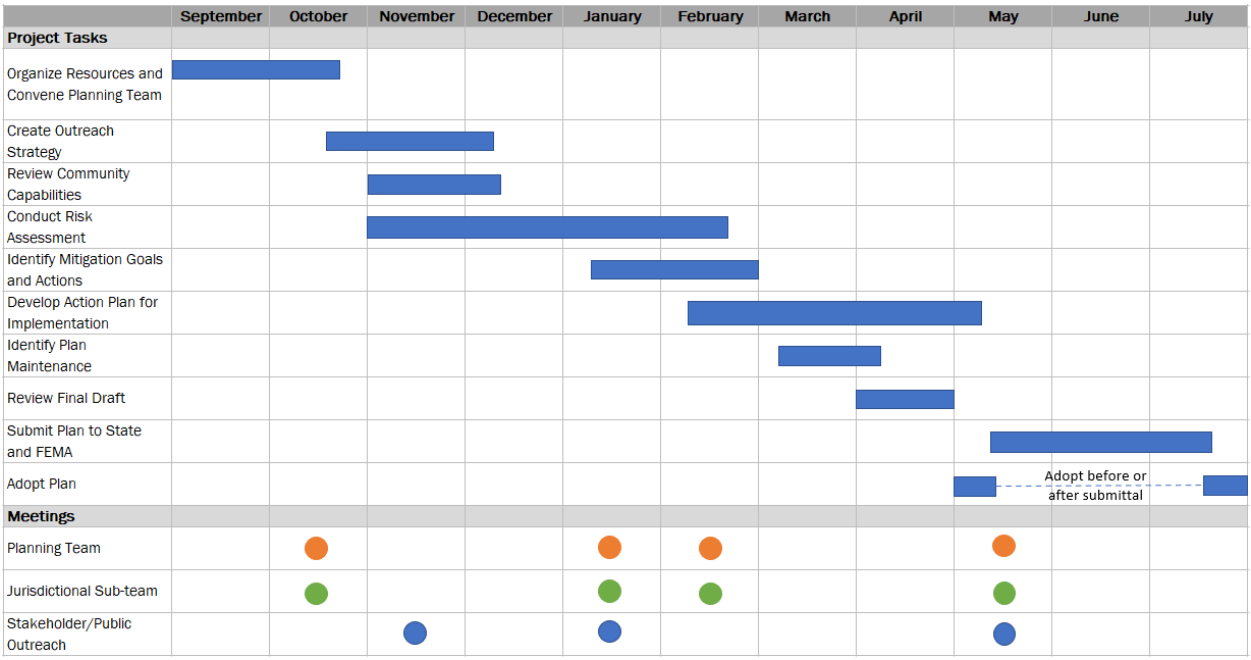
How can plan participants support the planning process?

Are there upcoming meetings or events you can use to engage plan participants?

Sample Planning Process Schedule

Use the table below as an example schedule of key planning tasks. Your timeline may differ. This is just a suggestion of how to organize your time and resources.

Table 1. Sample Schedule of Tasks



Sample Voluntary Participation Agreement

PURPOSE

A Voluntary Participation Agreement (VPA) is hereby executed between the participating jurisdictions in the [Insert Title of Plan]. "Participating jurisdictions" in this VPA are:

- [insert Lead Community name]
- [insert Community A name]
- [insert Community B name]

The purpose of this VPA is to establish commitment from and a cooperative working relationship between all Participating Jurisdictions in the development and implementation of the [Insert Title of Plan]. In addition, the intent of this VPA is to ensure that the multi-jurisdictional hazard mitigation plan is developed in accordance with Title 44 of the Federal Code of Regulations Part 201.6; that the planning process is conducted in an open manner involving community stakeholders; that it is consistent with each participating jurisdiction's policies, programs, and authorities; and that it is an accurate reflection of the community's values.

This VPA sets out the responsibilities of all parties. The VPA identifies the work to be performed by each participating jurisdiction. Planning tasks, schedules, and finished products are identified in the Work Program and Schedule. The plan created as a result of this VPA will be presented to the governing body (Planning Commission, City Council and/or Board of Commissioners, etc.) of each participating jurisdiction for adoption.

BACKGROUND

Mitigation plans form the foundation for a community's long-term strategy to reduce disaster losses. They help break the cycle of disaster damage, reconstruction, and repeated damage. The Participating Jurisdictions in a mitigation planning process benefit by:

- Identifying cost-effective actions for risk reduction.
- Directing resources to the greatest risks and vulnerabilities.
- Building partnerships by involving people, organizations and businesses.
- Increasing education and awareness of hazards and risk.
- Aligning risk reduction with other community objectives.
- Providing eligibility to receive federal hazard mitigation grant funding.

The [insert Lead Community name] has received a grant from the Federal Emergency Management Agency (FEMA) to prepare a multi-jurisdictional hazard mitigation plan in accordance with Title 44 of the Federal Code of Regulations Part 201.6.

PLANNING TEAM RESPONSIBILITIES

[Insert Lead Community name] will act as the Lead Community. They will assign a Chairperson of the Planning Team for the [Insert Title of Plan]. The Participating Jurisdictions authorize the Lead Community to manage and facilitate the planning process in accordance with the Work Program and Schedule.

The Participating Jurisdictions understand that representatives must engage in the following planning process. This is more fully described in the Local Mitigation Planning Handbook. It includes, but is not limited to:

- Develop the Work Program and Schedule with the Planning Team.
- Organize and attend regular meetings of the Planning Team.
- Help the Planning Team develop and conduct an outreach strategy to involve other planning team members, stakeholders, and the public, as appropriate to represent their Jurisdiction.
- Identify community resources available to support the planning effort. This includes meeting spaces, facilitators and media outlets.
- Provide data and feedback to develop the risk assessment and mitigation strategy. This includes a specific mitigation action plan for their Jurisdiction.
- Submit the draft plan to their Jurisdiction for review.
- Work with the Planning Team to incorporate all their Jurisdiction's comments into the draft plan.
- Submit the draft plan to their respective governing body for consideration and adoption.
- After adoption, coordinate a process to monitor, evaluate and work toward plan implementation.

PLANNING TEAM

The following points of contact and alternatives are authorized on behalf of the governing bodies to participate as members of the Planning Team for the [Insert Title of Plan]:

[Insert Points of Contact for the Lead Jurisdiction and for each Participating Jurisdiction, and any alternative Points of Contact, including, at a minimum:]

- Name
- Title
- Office/Agency
- Name of Participating Jurisdiction

- Address
- Phone number
- Email address

VPA IMPLEMENTATION

This VPA will be in effect from the date of signature by all parties, and will remain in effect through the duration of the planning process. It and will terminate after adoption of the final FEMA-approved mitigation plan by all participating jurisdictions, or 5 years after FEMA approval, whichever is earlier. It may be terminated prior to that time for any Participating Jurisdiction by giving 60 days written notice. This VPA is to be implemented through the attached Work Program and Schedule, and any addendums that describe specific activities, programs and projects, and if necessary, funding by separate instrument.

[Insert signature block for each Participating Jurisdiction, or attach resolutions]

Signature: _____

Name of Authorized Government Official

Title (City Manager, Mayor, County Emergency Management Director, etc.)

Name of Lead Jurisdiction

Office/Agency

Date: _____

Signature: _____

Name of Authorized Government Official

Title (City Manager, Mayor, County Emergency Management Director, etc.)

Name of Jurisdiction A

Office/Agency

Date: _____

ATTACHMENTS

Plan Work Program and Schedule

Sample Public Opinion Survey

Your household has been randomly selected to participate in this survey on public perceptions and opinions about natural hazards in your county. In addition, we would like information about the methods and techniques you prefer for reducing the risks and losses associated with these hazards. The questionnaire should be completed by an adult, preferably the head of household. The information you provide will be used to help improve public/private coordination, mitigation, and risk reduction efforts in your county. The survey should take less than 30 minutes to complete.

This is a public opinion survey. The results will inform local natural hazard mitigation planning. Your returned, completed survey indicates your willingness to take part in the study. Participation in this study is voluntary and anonymous. None of the information you provide will be attributed to you directly.

NATURAL HAZARD INFORMATION

First, we would like to know about your experiences with natural hazards.

4. During the past 5 years, in the county you currently reside in, have you or someone in your household directly experienced a natural disaster? This could be an earthquake, severe windstorm, flood, wildfire, or other type of natural disaster.

   ☐ Yes

   ☐ No

5. How concerned are you about the following natural disasters affecting your county? (Check the corresponding box for each hazard)

Natural Disaster	Very Concerned	Somewhat Concerned	Neutral	Not Very Concerned	Not Concerned
Drought	☐	☐	☐	☐	☐
Dust Storm	☐	☐	☐	☐	☐
Earthquake	☐	☐	☐	☐	☐
Flood	☐	☐	☐	☐	☐
Landslide/Debris Flow	☐	☐	☐	☐	☐
Wildfire	☐	☐	☐	☐	☐
Volcanic Eruption	☐	☐	☐	☐	☐
Windstorm	☐	☐	☐	☐	☐
Severe Winter Storm	☐	☐	☐	☐	☐

Natural Disaster	Very Concerned	Somewhat Concerned	Neutral	Not Very Concerned	Not Concerned
Extreme Heat	□	□	□	□	□
Other: _____	□	□	□	□	□

6. Whom would you most trust to provide you with information about how to make your household and home safer from natural disasters? (Please check up to three)

   ☐ News media

   ☐ Government agency

   ☐ Insurance agent or company

   ☐ Utility company

   ☐ University or research institution

   ☐ Neighbor/friend/family member

   ☐ Elected official

   ☐ American Red Cross

   ☐ Other non-profit organization

   ☐ Social media (e.g., Facebook)

   ☐ Not sure

   ☐ Other: _____

7. Prior to receiving this survey, were you aware of your county's hazard mitigation plan?

   ☐ Yes

   ☐ No

COMMUNITY VULNERABILITIES AND HAZARD MITIGATION STRATEGIES

To assess community risk, we need to understand which community assets may be vulnerable to natural hazards in the region. Vulnerable assets are those community features, characteristics or resources that may be impacted by natural hazards (e.g., populations with functional needs, economic components, environmental resources, etc.). The next set of questions will focus on

vulnerable assets in your community. It will also cover your preferred strategies to mitigate risk to those assets.

8. Community assets are features, characteristics or resources that either make a community unique or allow the community to function. For the following categories, what do you see as vulnerable in your community? Write a short description for each.
    - **Human** (Loss of life and/or injuries)
    - **Economic** (Business closures and/or job losses)
    - **Infrastructure** (Damage or loss of bridges, utilities, schools, etc.)
    - **Cultural/Historic** (Damage or loss of libraries, museums, fairgrounds, etc.)
    - **Environmental** (Damage or loss of forests, rangeland, waterways, etc.)
    - **Governance** (Ability to maintain order and/or provide public amenities and services)

9. Next we would like to know what specific types of community assets are most important to you.

(Check the corresponding box for each asset)

Community Assets	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Elder-care facilities	□	□	□	□	□
Schools (K-12)	□	□	□	□	□
Hospitals	□	□	□	□	□
Major bridges	□	□	□	□	□
Fire/police stations	□	□	□	□	□

Community Assets	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Museums/historic buildings	□	□	□	□	□
Major employers	□	□	□	□	□
Small businesses	□	□	□	□	□
College/university	□	□	□	□	□
City Hall/courthouse	□	□	□	□	□
Parks	□	□	□	□	□
Other: _____	□	□	□	□	□
Other: _____	□	□	□	□	□
Other: _____	□	□	□	□	□
Other: _____	□	□	□	□	□
Other: _____	□	□	□	□	□

10. Many activities can reduce your community's risk from natural hazards. These activities can be both regulatory and non-regulatory.

Please check the box that best matches your opinion of the following strategies to reduce risk and loss associated with natural disasters.

Community- wide Strategies	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Not Sure
I support implementing government rules to reduce risk	□	□	□	□	□	□
I support a non-governmental approach to reducing risk	□	□	□	□	□	□
I support a mix of both governmental and non-governmental approaches to reducing risk	□	□	□	□	□	□
I support policies to prohibit development in areas subject to natural hazards	□	□	□	□	□	□

Community- wide Strategies	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Not Sure
I support the use of tax dollars (federal and/or local) to compensate landowners for not developing in areas subject to natural hazards	□	□	□	□	□	□
I support the use of local tax dollars to reduce risks and losses from natural disasters	□	□	□	□	□	□
I support protecting historical and cultural structures	□	□	□	□	□	□
I would be willing to make my home more disaster-resistant	□	□	□	□	□	□
I support steps to safeguard the local economy following a disaster event	□	□	□	□	□	□
I support improving the disaster preparedness of local schools	□	□	□	□	□	□
I support a local inventory of at-risk buildings and infrastructure	□	□	□	□	□	□
I support the disclosure of natural hazard risks during real estate transactions	□	□	□	□	□	□

11. Natural hazards can have a significant impact on a community. Planning for these events can help lessen the impacts. The following statements will help determine residents' priorities in planning for natural hazards in your county.

Please tell us how important each one is to you.

Statements	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Protecting private property	□	□	□	□	□
Protecting critical facilities (e.g., transportation networks, hospitals, fire stations)	□	□	□	□	□
Preventing development in hazard areas	□	□	□	□	□

Statements	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Enhancing the function of natural features (e.g., streams, wetlands)	□	□	□	□	□
Protecting historical and cultural landmarks	□	□	□	□	□
Protecting and reducing damage to utilities	□	□	□	□	□
Strengthening emergency services (e.g., police, fire ambulance)	□	□	□	□	□
Disclosing natural hazard risks during real estate transactions	□	□	□	□	□
Promoting cooperation among public agencies, citizens, non-profit organizations and businesses	□	□	□	□	□

GENERAL HOUSEHOLD INFORMATION

Finally, we would appreciate any information you are willing to share with us about your household. This information will remain confidential and is for survey comparison purposes only.

12. Zip code (optional): _____

13. County: _____

14. How long have you lived in the state?

☐ Less than 1 year

☐ 1-5 years

☐ 6-9 years

☐ 10-19 years

☐ 20 or more years

- Do you own or rent your home?

☐ Own

☐ Rent

- Do you own/rent a:

☐ Single-family home

- ☐ Duplex
- ☐ Apartment (3-4 units in structure)
- ☐ Apartment (5 or more units in structure)
- ☐ Condominium/townhouse
- ☐ Manufactured home
- ☐ Other: _____

Sample Plan Organization

15. Cover Page
    a. Title (*City or Town Local Hazard Mitigation Plan*)
16. Jurisdiction Information
    a. Name(s) of Participating Jurisdiction(s)
    b. New Plan or Update?
    c. Previous FEMA Approval Date(s)
    d. Version (with submittal dates)
    e. Funding Assistance (optional)
17. Table of Contents
18. Executive Summary [Optional]
19. Adoption Documentation
20. Background [Optional]
    a. Introduction to Hazard Mitigation and the Plan/Plan Update
        i. Community Planning Area
    b. Location Information and Geography
    c. Demographics
    d. Housing
    e. Land Use and Infrastructure
    f. Community Development and Development Trends
    g. Historic, Natural/Environmental and Cultural Resources
    h. Commerce, Industry, Academia
    i. National Flood Insurance Program (NFIP) Participation and Community Rating System (CRS) participation, if applicable
21. Planning Process
    a. Purpose, Overview and Background
    b. Building Support: Community Involvement, Roles and Responsibilities
        i. The Planning Team, Consultant (if applicable) and Local Leadership
        ii. Multi-Jurisdictional Participation
        iii. Stakeholders
        iv. Public
    c. Understanding the Community's Risks
        i. Gather Resources

ii. Review and Incorporation of Information
iii. Stakeholder and Public Input
iv. Developing/Updating the Risk Assessment

d. Developing and Updating the Mitigation Strategy
    i. Identification and Review of Goals, Actions, Priorities, Changes, Progress
    ii. Review and Incorporation of Stakeholder and Public Exchange
e. Bringing the Plan to Life: Implementation and Maintenance
    i. Method, Responsibilities and Schedule
        1. Plan [Update] Review, Adoption, and Approval
        2. Monitoring
        3. Evaluation (additional documents in appendices)
        4. Updates
    ii. Continued Public Involvement (also see Appendix – Outreach Strategy)

22. Risk Assessment
    a. Defining Risk and Methodology
    b. Significant events since the last plan update (major disasters, major developments, conditions effecting risk in the community)
    c. Hazards
        i. a. Hazard Identification
            1. Hazards Excluded From Risk Assessment (with explanation)
            2. Hazard Profiles (each applicable hazard)
                a. Description
                b. Location
                c. Extent (magnitude)
                d. Previous Occurrence, Disasters
                e. Probability of Future Events
                f. Effects of climate change on the hazard's location, severity and probability
    d. Vulnerability for Each Hazard
        i. a. Community Assets
            1. People
            2. Economy
            3. Built Environment

a. Existing structures
b. Infrastructure
c. Critical Facilities/Community Lifelines
d. Historic and Cultural Resources
e. Effects of Climate Change, Population and Land Use Change on Vulnerability
f. Future Development

4. Natural Environment
    a. Water Resources, Watershed
    b. Protected Natural Areas
    c. Other

e. Risk Analysis and Assessment Matrix
    i. Methodology
        1. Exposure Analysis
        2. Historical Analysis
            a. Repetitive and Severe Repetitive Loss Properties
        3. Scenario Analysis (if applicable)
        4. Changes in Development Analysis (for plan update)
    ii. Vulnerability Summary (for each hazard)
        1. Identified Risk in the Community
        2. Effects of Climate Change, Population and Land-Use Change on Vulnerability
        3. Jurisdictional Vulnerability - Narrative Summary, Matrix or Annexes

23. Capability Assessment
    a. Purpose – Capabilities for Both Existing and Future Risk
    b. Types and Evaluation of Capabilities. This can be outlined by program areas, or recommended by authorities, policies, programs, resources, community support/leadership, and the ability to expand/improve.
        i. Local Government and Program Areas. Highlight applicability of local authorities, staffing, funding, and planning tools or mechanisms for hazard mitigation. This includes but is not limited to:
            1. Form of Government (town council, selectboard, planning board, home rule, MPO, etc.)
            2. Planning, Building, Housing - Community Development

3. Transportation, Public Works, Utilities
4. Floodplain Management/Stormwater, Open Space, Land Conservation, Local Forestry
5. Emergency Management
6. Economic (Re-)Development
7. Health
8. GIS (including database, modeling abilities of HAZUS, SLOSH, and planning scenarios)
9. Dam Safety

ii. National Flood Insurance Program, CRS

iii. Partnerships and Other Community Affiliations, Programs, Resources

c. Integration With Existing Plans and Local Processes (other planning mechanisms)

i. Accomplishments

ii. Opportunities and Process for Integration

1. Community Planning Mechanisms or Activities (e.g. next comprehensive plan update)
2. Method and Timeline

d. Capability Needs/Challenges - Summary

24. Mitigation Strategy

a. Goals (as well as vision and objectives, if available)

b. Development and Update of Strategy and Actions – Methodology

i. Identifying Types of Mitigation Actions (identify preparedness separately or consider in appendix)

1. Existing and New Actions
2. Actions Addressing Existing and Future Development
3. NFIP-related actions
4. Climate Change Adaptation – Future Risk

ii. Analysis of Actions – Narrative or Table (describing even those actions not selected to move forward)

iii. Prioritization

1. Qualitative or quantitative prioritization method describing benefits and costs, including to underserved groups and socially vulnerable populations)

c. For Plan Updates: Previous Actions: Meeting Targets and Progress

d. Action Plan
    i. Actions Using Risk Assessment Matrix by Vulnerable Area
        1. Descriptions
        2. Action Type
        3. Pre or Post Disaster
        4. Priority Level (low, medium, high)
        5. Change in Priority (for plan update)
        6. Lead Organization
        7. Supporting Organization(s)
        8. Timeframe
        9. Financing Options
        10. Cost Estimate
        11. Benefit

25. Moving Towards a Safe, Resilient, and Sustainable Community
    a. Evaluation: Progress and Challenges (for plan update)
        i. Involvement, Capabilities, Meeting Goals and Targets
        ii. Changes in Development – Impacts to Risk
        iii. New Disasters – Changes in Risk
    b. Changes in Priorities (for plan update)
    c. Success Stories and Best Practices (optional)
26. References
27. Jurisdictional Annexes
28. Appendices
    a. Assessing Risk: Maps and Climate Information
    b. Building Support: Planning Process Additional Documentation
        i. Outreach Strategy and Materials
        ii. Meeting Summaries, Notes, Sign-In Sheets
        iii. Invites, Public Meeting Announcements, Web/Ad Postings
        iv. Surveys, Questionnaires, Evaluations, etc.
    c. Capability Assessment (additional documentation, if needed)
    d. Emergency/Preparedness Strategy Actions (optional)
    e. Final Local Mitigation Plan Review Tool from Approved Plan
    f. Glossary

Considering a Consultant to Support Local Mitigation Planning Starter Kit

This fact sheet is for plan owners who are considering hiring a consultant to support the local mitigation planning process and the compilation of a mitigation plan. The planning process requires active participation and leadership from the community(ies) involved. Outside help can support the whole process or just certain phases and tasks. You do not need formal training to lead this process. However, hiring a consultant may help meet FEMA requirements and create a stronger plan. Consider support if:

- You want specific expertise. This could be from experts or specialists in community planning, engineering, public outreach and engagement, or Geographic Information Systems (GIS).
- You need help identifying hazards, risks, and vulnerabilities, or if you need help estimating potential losses.
- You want a third party to facilitate discussions about mitigation goals, actions and priorities.
- There are capacity issues within your community(ies) to lead or help with the process.

Planning consultants work under contract to give professional and technical support. They can come from private consulting firms, academic institutions, nonprofit organizations or regional planning agencies. Before you hire a consultant, you should assess their qualifications, expertise and their approach to the project as outlined in their proposal. The table below highlights the main tasks of developing a mitigation plan. It discusses which tasks can be delegated for outside assistance. It also shows which tasks the plan owner should still take ownership and responsibility for.

Examples of Consultant and Plan Owner Roles

Tasks	Contractor Role	Plan Owner Role
Planning Process, Meetings/Workshops	**Minimal Assistance** - Help the community start its planning process. Identify key meetings and decisions that need to occur. Create a timeline and schedule for the completion of all tasks. **Significant Assistance** - Help start the planning process. Create materials for the various meetings and workshops. Lead the meetings and workshops. Prepare notes as required.	Determine key government, stakeholder and community members to be on the Planning Team. Explain the purpose of the plan/update process to the Planning Team. Make decisions about the number and location of meetings and workshops. Help coordinate meetings and attendance. Review and approve all meeting materials.

Examples of Consultant and Plan Owner Roles		
Public Outreach and Participation	**Minimal Assistance:** Help the jurisdiction develop a public outreach strategy. **Significant Assistance:** Help develop the public outreach strategy and help with implementation of the strategy (attend meetings, coordinate media, etc., help respond to public comments/questions).	Determine if the nature and number of meetings or other outreach methods are adequate to engage the public. Attend meetings and lead portions of the meetings. Address any needs for more targeted outreach to specific community members. Coordinate media and respond to public comments and questions.
Hazard Assessment	**Minimal Assistance:** Run a hazard assessment with data provided by the community. GIS and Hazus software are example tools for such an assessment. **Significant Assistance:** Help determine necessary data inputs and collect them. Run the hazard analysis. Present the results of the analysis to participants.	Determine the critical facilities, community lifelines, or other community assets to include in the assessment. Check that the assessment methodology uses appropriate parameters (e.g. timeframe, geographic boundaries, etc.) Ensure that the results of the assessment are in line with the community's experiences (e.g. most vulnerable assets have previously been damaged during hazard events).
Compilation of the Plan	**Minimal Assistance:** Supply an outline or table of contents of the required sections in a plan. **Significant Assistance:** Collect all the information from the meetings, workshops, etc., and compile the hazard mitigation plan.	Check that the compiled elements of the plan meet the requirements in the Local Mitigation Planning Policy Guide.

Examples of Consultant and Plan Owner Roles		
Multi-Jurisdictional Plan Coordination	**Minimal Assistance:** Provide guidance on how a multi-jurisdictional plan is different from a single-jurisdiction plan. Advise on the best approaches for multi-jurisdictional planning and supply helpful resources as needed. **Significant Assistance:** Help the participating jurisdictions complete all parts of the plan that are specific to their communities. Fold these pieces into the plan so that all participants are eligible for plan approval and adoption.	Work directly with all participants to make sure they understand and meet all planning requirements. Make sure that all participating jurisdictions have a voice in the plan's coordination and development.
Submit the Plan for State and FEMA Review and Approval	**Minimal Assistance:** Provide suggestions on how to respond to state and FEMA comments. **Significant Assistance:** Help the community with any required revisions that may come from the state and FEMA.	Understand the review comments from the state and FEMA and ask the consultant to address. Lead the adoption process so that the plan is approved by all participating jurisdictions.

EVALUATE THE CONSULTANT'S QUALIFICATIONS AND EXPERTISE

Many communities hire consultants to help coordinate and facilitate the planning process. Consultants can also compile the entire hazard mitigation plan for state and FEMA approval. If your community decides to hire one, think about which phases you want help with. Then use these factors to assess a consultant's background and expertise.

General: Regardless of the level of support you seek, look for a planning consultant that:

- Knows the current federal and state requirements for local hazard mitigation planning. This includes the updated policies in the Local Mitigation Planning Policy Guide released April 19, 2022.
- Knows the applicable regulations, laws and guidance, and understands how to apply them to a hazard mitigation plan. For example, they must know the requirements of the Disaster Mitigation Act of 2000; state, tribal and local regulations; and the NFIP requirements.
- Understands that each community has unique demographic, geographic and political conditions. Be sure to think about the differences between hiring a consultant that is local versus one that is outside the region or even the state.
- Has attended FEMA Mitigation Planning training.

- Is prepared to give references. This should include names and phone numbers for past clients.
- Can show hazard mitigation plans that were approved on first submission.
- Can show approved plans that are considered models or best examples.
- Can successfully use technical tools, research, media, graphics and communication in their work.

Planning Process: If you need support with the planning process, look for a consultant that:

- Understands that community input and participation are key to a strong hazard mitigation plan.
- For plan updates, knows how to build on the existing hazard mitigation plan rather than starting from scratch.
- Has experience with different forms of community engagement and outreach. They should show they can do successful public outreach, especially to underserved communities.

Risk Assessment: If you need support with the risk assessment, look for a consultant that:

- Knows how to create community-specific risk assessments that help identify key vulnerabilities and mitigation needs.
- Knows how to find and use the latest FEMA Risk Mapping, Assessment and Planning data and other flood risk products.
- Can help communities assess changes in development, hazards and vulnerability since the last plan update.
- Can help communities think about the effects of future conditions, including climate change. They should be able to describe how climate change affects the risk assessment.

Mitigation Strategy: If you need support with mitigation strategy, look for a consultant that:

- Is familiar with emergency management and multi-hazard mitigation concepts.
- Has proven experience developing successful and creative strategies that connect to the Risk Assessment. These strategies should also address the needs of underserved communities.
- Understands long-term risk reduction. They should use strategies based in community development, land management, resiliency, sustainability and smart growth practices.
- Knows how mitigation, preparedness, response and recovery are different. You can address all four, but the focus of the hazard mitigation plan is mitigation.
- Knows the financial resources a community could access for funding projects.

- Knows how long-term risk reduction connects to community development, land management, resiliency, sustainability and smart growth practices.
- Understands the connection between the hazard mitigation plan and other planning mechanisms in the community.
- Knows the overlaps between hazard mitigation plans and the CRS and Community Wildfire Protection Plans. The consultant should address the requirements for multiple programs in one plan.

Maintenance and Update: If you need support with plan maintenance and updates, look for a consultant that:

- Can support a community with project execution and progress through a successful strategy.
- Knows the requirements for a plan update as opposed to an initial plan.
- Understands the updates made in the 2022 Local Mitigation Planning Policy Guide. They should also know how to apply these to hazard mitigation plans.
- Clearly states they will support you through the FEMA review process. A contract is complete when the plan has received the FEMA status of "Approvable Pending Adoption" or "Approved."

Consultants do not own the planning process! They facilitate it.

They do not make the decisions for the plan's contents, process, risk findings, strategies or priorities. They help communities make decisions. Consultants do not have ownership of the plan; it is not proprietary.

EVALUATE THE CONSULTANT'S PROPOSAL

If your community wants to hire a private consultant, you may need to do a Request for Proposals (RFP). Procurement laws and rules vary from state to state and even from community to community. However, going through an RFP process is recommended for most cases. As you develop the RFP and assess submissions, think about the following.

- **Scope of Work (SOW)**: When hiring a consultant, you should give them a detailed SOW. Here is some advice for writing your SOW.
  - Talk to the State Hazard Mitigation Officer about the requirements for a FEMA-approved hazard mitigation plan. For example, the hazard profiles may not need detailed databases of prior events or complex geospatial analyses of location and extent. These analyses might cost more than the community has to invest. Some states may have sample scopes of work

or lists of deliverables. These can be reviewed when developing the actual SOW for the planning area.

- Decide what professional skills or services the community staff can provide before asking for proposals. You should engage those who know your community(ies) best first, depending on their capacity. For example, if your community has a public outreach officer, they could make the public outreach strategy for your hazard mitigation plan. If your community has GIS capabilities, you may not need outside assistance for geospatial data analysis and mapping.

- Build in allowances for changes if the draft plan does not match your community's vision. It is the community's plan, not the consultant's.

- Schedule:

  - Compare the consultant's proposed timeline with the community's desired schedule, staff availability, and for plan updates when the current plan expires.

  - The schedule should include multiple opportunities to review and comment on draft portions of the plan. There should be enough time for revisions. Be clear about how much time is needed for reviews.

  - The timeline and budget must have plenty of state and FEMA review time. The planning team also needs enough time to make any required or recommended revisions, if applicable, following these reviews. FEMA recommends expecting an 18 month timeline from project kickoff through review and adoption. This may not apply to every community. But if your community does not have set expectations, this can be a starting point.

- Deliverables:

  - The consultant's final deliverable must be a hazard mitigation plan that has received the FEMA status of "Approvable Pending Adoption" or "Approved." The consultant should be available to help with the plan review and approval process. They should also help in the local adoption process.

  - Be sure to include in the contract that the jurisdiction will review drafts of the plan during development. The final plan should not be the first time people see the written document.

  - Include in your contract that the consultant will share digital copies of the plan any time during development. They must also share copies of the finished plan. The digital copy must be editable. The contract should also state the number of printed and/or bound copies of the final plan that the consultant will share.

  - If the consultant is doing mapping or a risk assessment, the contract should note that you will get editable versions of these as well. These could be GIS files or a spreadsheet that holds the results of an exposure analysis.

- Make sure the final plan meets all scoped requirements. For example, if your SOW specified a Level 2 Hazus analysis then make sure that the consultant provided that deliverable unless the project scope was amended. If your plan was funded by a FEMA Hazard Mitigation Assistance grant, scope revisions are often complex. This is why scope development for grant funding is so important.
- Ask for quality work over quantity. While consultants may have standard templates that they use, remember that this is your community's plan. Each community has unique circumstances, and those should be reflected in both the plan's development and in the final plan itself. Ask the consultant to develop a planning process that aligns with your community's needs rather than using a one-size-fits-all approach.

- **Multi-Jurisdictional Plan Scopes:** Multi-jurisdictional plans will need more coordination among communities. The schedule needs to account for different jurisdictions' timeframes and meeting schedules.
  - When a county/parish/township includes a federally recognized tribe in its planning area, the tribe can take part in the multi-jurisdictional plan. The tribe can also complete a plan on its own. If the tribe chooses to take part, the plan must include the provisions for 44 CFR §201.7 for the tribal jurisdiction. Complete all provisions for both local and tribal plan regulations at the same time. This way, the plan has only one review cycle with FEMA.

- **References**: References are a key part of hiring any consultant. Here are a few items to consider when asking for references.
  - Ask the consultant to provide references for their most recent work.
  - Contact the references. Ask what the working relationship was with the consultant, and if there were any lessons learned from the process.

- **Cost**: The cost to develop or update the plan is an important component of the SOW. Here are some items to consider:
  - Will you use grant funding for part of the process? If so, how will you meet the local match? Will it be through local funds, or in-kind services?
  - If using grant funds, ensure that the plan and the process meets all the criteria that were included in the grant application.
  - Ensure that the consultant provides specific breakdowns of their cost. They should provide updates throughout the process. This will help ensure the project remains on schedule.
  - Make sure that the cost includes addressing any required revisions from the state and/or FEMA. The contract should specify that the end product will be a FEMA-approved and locally adopted plan.

- Consider if the planning process will include bringing all the communities together for larger meetings, or if the contractor will need to reach out to them individually.
- If the contractor is expected to facilitate the adoption of the plans with local communities, be sure to specify that in the SOW.

Be the local champion for your plan!

While consultants can play a key role in developing a mitigation plan, remember that you and your planning team should be championing the process. You and the planning team should determine how to engage planning partners and the public, who understand local risks and can create local solutions. Successful plans are those that reflect the community and have buy-in. Review the plan often. Make sure that the plan talks about issues that are important to the local community(ies).

Local Hazard Mitigation Plan Press Release Starter Kit

INTRODUCTION

An adopted hazard mitigation plan is a demonstration of a community's commitment to safeguarding residents, visitors, homes, and businesses. After the adoption of a local hazard mitigation plan, it is important to celebrate the hard work and successes of planning. Sharing planning successes through press releases and social media can expand awareness of mitigation planning efforts. It can also support ongoing risk communications. This document provides an overview and examples of how to announce the adoption of a hazard mitigation plan. Examples use a fictional city called "Somewhere".

WHAT IS A PRESS RELEASE?

A press release is a written communication providing short, specific information on an event - in this case, the adoption of a mitigation plan. These communications are sent to news outlets to provide awareness and to be published based on news cycles and interest. Press releases are an easy way to inform the public of a mitigation plan's adoption, update or drafting.

HOW TO SEND A PRESS RELEASE

Identify your local news outlets.

- If you are not already familiar with your local newspapers, start there. Search online for your city's name. Go to the "News" section of your search engine to find news outlets that cover your area. If the newspaper is available online, read through to find relevant sections and journalists who regularly cover topics like local government or emergencies.

Be sure to follow each outlet's guidelines for submission.

- Different newspapers and magazines have different requirements. You are more likely to be published the closer you stay to these guidelines.

Send your release to local outlets – individually and with the correct names.

- When sending a press release, focus your distribution on those outlets that cover information such as disasters, emergencies and local government. Send out each email individually and address the journalist by their name, if possible. If you are unable to identify a direct contact for this type of content, it's best to reach out to the following contacts:
    - Daily newspaper in your community: Contact the City Editor or the editor in charge of the section that relates to your content.
    - Weekly newspaper: Editor.
    - Magazine: Editor or Managing Editor.

- Radio stations: News Director.

If you are emailing the press release, put the release in the body of the email and attach a copy.

- For ease of reading, many journalists prefer having the information directly in the body of the email. However, if you have any images or additional information, that should be included in an attachment. This keeps the message as short and direct as possible.

Follow up with a phone call.

- Contact each journalist you emailed the press release to. Ensure that they have all the information they need and that the story receives attention.

Press Release Tips

- Include the jurisdiction's name, date the plan was adopted, what governing body adopted it, and the name of the plan.
- Provide an example from the risk assessment of an impacted area, and a mitigation measure included in the mitigation strategies.
- Paste a link to the plan's location.

EXAMPLE PRESS RELEASE FOR A LOCAL HAZARD MITIGATION PLAN

Somewhere Adopts Plan, Commits to Reduce Effects of Disasters

January 6, 20XX

SOMEWHERE – On January 1, 20XX, Somewhere's City Council moved to adopt the Somewhere City Hazard Mitigation Plan. This adoption demonstrates the city's continued commitment to reducing the damage from natural hazards, like earthquakes and flooding.

Hazard mitigation plans help residents and officials of Somewhere understand what hazards affect the community, where those hazards have the greatest impact, and what steps the community can take to lessen hazards' impacts. For example, in the case of Somewhere, there is a high risk for flash flooding along King Lane and Ninth Street. The plan suggests adding additional storm water drains to help the streets handle the heavy rainfall in the spring and summer months. Each of the hazards mentioned in the plan has actions identified that can reduce their impacts on the community.

To see what hazards affect where you live, visit [LINK TO NATIONAL RISK INDEX] and search for your address. Then visit [LINK TO CITY PLAN] to read about what mitigation strategies are in place to reduce your risk.

SOCIAL MEDIA

Understanding who is on different social media platforms and how to leverage features commonly used on each outlet is important to promoting messaging. Below is a breakdown of three major social media platforms, including their audiences and example posts. Highlighted sections in examples show where to change the sample text if you use the posts verbatim.

To learn more about using social media in emergency management, refer to the IS-42: Social Media in Emergency Management course available for free from FEMA's Emergency Management Institute.

LinkedIn

Audience and Use

LinkedIn users are typically current professionals, job seekers and individuals interested in networking in a certain career field. Posts on LinkedIn should be focused on this professional subset. They should have messaging tailored to local governments, community planners, zoning officials and emergency managers. Encouraging stakeholders involved in the plan's production to repost the announcement will provide additional traction and visibility.

Example LinkedIn Post

Today Somewhere's City Council moved to adopt the Somewhere Hazard Mitigation Plan, committing to reduce the effects of disasters through long-term actions that reduce impacts to people and property. Do you know if your home or business is in the path of danger in a storm or flood? Visit [LINK TO PLAN] to find out – then read what Somewhere is doing about it!

Twitter

Audience and Use

Twitter posts gain more traction with relevant trending hashtags attached to the post. While the creation of a custom hashtag allows you to find all related posts, also including a trending hashtag will increase the visibility of a post. Twitter provides its own analysis directly on its site of trending topics and tags, but additional external services are also available.

Example Twitter Post

Emergency managers and city planners teamed up to take on reducing Somewhere's risk from disasters. [LINK TO PRESS RELEASE] #planning #local

Facebook

Audience

The average Facebook user is between 25 and 34 years old. Posts should focus on this demographic. Posts with images or videos have higher views and clicks, suggesting that successful posts should include a relevant, interesting image. Bringing the message down to the individual level instead of addressing the community aspect also increases the likelihood of post interaction. Average education is nearly evenly distributed between high school, some college, and college level. With this demographic diversity, posts should be more general than tailored for a variety of education levels and interests.

Example Facebook Post

Know your risk, know your plan! Somewhere has an updated plan showing how disasters can affect where you live – and what actions both the government and property owners can take to reduce future damages. Read more here: [LINK TO WEBSITE WITH PLAN]

ADDITIONAL RESOURCES

FEMA Mitigation Planning Program**:** This page introduces hazard mitigation planning and describes its benefits. The intended audience is state, tribal, and local officials and members of the public interested in hazard mitigation planning.

IS-42: Social Media in Emergency Management: By the end of this course, participants will be able to:

- Explain why social media is important for emergency management.
- Describe the major functions and features of common social media sites currently used in emergency management.
- Describe the opportunities and challenges of using social media applications during the five phases of emergency management.
- Describe better practices for using social media applications during the five phases of emergency management
- Describe the process for building the capabilities and to sustain the use of social media in an emergency management organization (state, local, tribal, territorial).

FEMA Social Media: This page has links to FEMA's different social media accounts and activities.

Local Hazard Mitigation Plan and Community Rating System Crosswalk Starter Kit

This handout summarizes the similarities between local hazard mitigation plan elements and the CRS steps and highlights key differences that are commonly overlooked.

(See FEMA's Mitigation Planning and the Community Rating System Key Topics Bulletin for more detailed information).

FEMA has two major hazard mitigation planning programs: local multi-hazard mitigation planning, and floodplain management planning under the Community Rating System (CRS). In most cases, doing a thorough job of including the protection of natural floodplain functions and floodplain species assessments in mitigation planning will often lead to more credit under Activity 510 of the CRS (specifically Element 512.a - Floodplain Management Planning[1]). As of May 2018, 99% of CRS communities also have a local hazard mitigation plan. However, the vast majority of CRS communities have not been able to maximize credits under Activity 510 (see Table 1). This handout is meant to help communities integrate mitigation planning and CRS planning. This will help them to produce more effective local flood mitigation actions and meet the criteria of both FEMA programs more efficiently.

Table 1. CRS Points Available per Step

CRS Planning Step	Maximum CRS Points	Average Points Earned
1. Organize to prepare the plan	15	10
2. Involve the public	120	34
3. Coordinate	35	10
4. Assess the hazard	35	25
5. Assess the problem	52	29
6. Set goals	2	2
7. Review possible activities	35	20
8. Draft an action plan	60	42
9. Adopt the plan	2	2
10. Implement, evaluate and revise	26	5
Point Total	382	171

[1] Table 1 illustrates the CRS Element 512.a points available, and the typical points earned by a local hazard mitigation plan.

There are many similarities between mitigation planning and CRS planning. Mitigation planners should be aware of some special criteria for the CRS credits. This handout is to help those preparing a local hazard mitigation plan who wish to include elements that will also earn CRS credits. This handout takes each local hazard mitigation plan element and:

- Provides the corresponding CRS step.
- Summarizes the CRS step.
- Calls out prerequisites and key differences between CRS and local hazard mitigation plan review criteria.
- Explains how to maximize CRS points.
- Highlights commonly missed elements (in callout boxes throughout this fact sheet).

There is one overarching difference between local hazard mitigation plan and CRS requirements: local hazard mitigation plan elements are either met or not met, whereas CRS steps are points based. Many CRS steps have minimum criteria, but a community earns more points for additional activities[2]. While CRS requirements are points-based, the planning process must at least address all 10 CRS steps of Activity 510. Skipping one of the CRS steps could result in no CRS credit or credits capped at 50 points[3].

CRS Step[4]	Local Hazard Mitigation Planning Element[5]	Crosswalk Details
Step 1. Organize to prepare the plan	**A1.** Document the planning process	*Prerequisites:* ▪ The CRS requires a Floodplain Management Plan (FMP) committee. *Key Differences:* ▪ The FMP committee can be the local hazard mitigation planning committee. It can also be a separate FMP committee that focuses on flooding. ▪ The FMP committee must meet at least five times (at key steps in the planning process - Steps 4, 5, 6, 7 and 8). **Commonly Missed CRS Elements:** A typical local hazard mitigation plan planning committee is different from an FMP committee. CRS requirements are more specific; you cannot go back and "fix" this at the end.

[2] The maximum CRS credit points that a plan may earn is 762 points; Element 512.a – Floodplain Management Planning includes 382 of the total potential points.
[3] If one CRS step is missing from a FEMA-approved hazard mitigation plan, the plan may receive CRS credit, but it is limited to 50 points. If two CRS steps are missing, no CRS credit will be given.
[4] The 10 CRS steps are detailed in Activity 510, Section 512.a, Floodplain Management Planning (FMP) at https://crsresources.org/manual/.
[5] Planning elements are per the Local Mitigation Planning Policy Guide and its Plan Review Tool.

CRS Step[4]	Local Hazard Mitigation Planning Element[5]	Crosswalk Details
		▪ For multi-jurisdictional plans, each community that wants to earn CRS points must have two staff representatives on the FMP committee. ▪ At least half of the representatives must attend all meetings of the FMP committee. *Maximize Points[6]:* ▪ Involve staff from multiple departments; include the community departments that implement or have expertise in activities of the plan. One point is given for each office represented; full credit is given for staff representing all six categories of CRS flood mitigation activities (see Table 2 below). ▪ Formally establish the planning process through the community's governing body.
Step 2. Involve the public	**A3.** Public involvement during the planning process	*Prerequisites:* ▪ The CRS requires a Public Planning Committee. This can also be the local hazard mitigation plan stakeholder group. **Commonly Missed:** CRS's definition of stakeholder/public involvement is more structured than what the local mitigation plan guidance describes. *Key Differences:* ▪ A local hazard mitigation plan requires the opportunity for stakeholders to participate; CRS requires active stakeholder/public participation. *Maximize Points:* ▪ Full credit is given if at least half the committee members are from outside the local government. ▪ Hold at least one public information meeting in the affected area(s) within the first 2 months of the planning process. This is separate from the planning committee meetings. ▪ Hold at least one public meeting at least 2 weeks before submitting the plan. Use the meeting to get input on the recommended plan. – Five points are given for each additional public information activity that explains the planning process and encourages input.

[6] Table 1 illustrates the CRS Element 512.a points available, and the typical points earned by a local hazard mitigation plan.

CRS Step[4]	Local Hazard Mitigation Planning Element[5]	Crosswalk Details
Step 3 (a). Review existing studies, reports and technical information	**A4. Review and incorporation of existing plans, studies, reports and technical information**	*Prerequisites:* ▪ Step 3(a) is basically the same as sub-element A4: – Review existing studies, reports and technical information. Review the community's needs, goals and plans for the area.
Step 3 (b). Coordinate with agencies and organizations	**A2. An opportunity for neighboring communities and local and regional agencies to be involved**	*Key Differences:* ▪ Step 3(b) is similar to sub-element A2, but it requires more than providing a chance to get involved. *Maximize Points:* Work with agencies and organizations outside the community's governmental structure to get their hazard data and ask for their input and participation in the process. **Commonly Missed:** Aside from contacting the various agencies and organizations outside the community's government structure, planning staff must document the contacts made and their responses.
Step 4. Assess the hazard	**B1. Hazard profile**	*Prerequisites:* ▪ The flood hazard assessment must include the sources, frequencies, extent and causes of flooding. Flood hazard areas that require assessment include: – The Special Flood Hazard Area shown on the Flood Insurance Rate Map (FIRM). – All repetitive loss areas if the community is a Category B or C (CRS communities should have already prepared repetitive loss area maps). – Areas not mapped on the FIRM that have flooded in the past (flood insurance claims can help with this). – Other surface flooding identified in other studies. *Key Differences:* ▪ Most local hazard mitigation plans meet the minimum requirement. Giving more details is an opportunity to get more points. *Maximize Points:* ▪ Include the following: discussion of less frequent flooding; areas likely to flood and potentially become worse in the future; and areas of past flooding and other natural hazards.

CRS Step[4]	Local Hazard Mitigation Planning Element[5]	Crosswalk Details
Step 5. Assess the problem	**B2. Hazard impact, vulnerability, and NFIP assessment**	*Prerequisites:* ▪ A summary of the jurisdiction's vulnerability to each hazard and the impact (the base criteria are basically the same as those for sub-element B2). ▪ Repetitive Loss (RL) communities must: – Include their RL areas. – Describe the causes of repetitive flooding. – Send an annual mailer with information on ways to protect properties from repetitive flooding. *Key Differences:* ▪ Most local hazard mitigation plans meet the minimum requirement. Giving more detail is a way to get more points. *Maximize Points:* ▪ Provide further details beyond the overall summary: – The impact of all flood-related hazards on various community attributes (including flood warning and evacuation systems; public health; critical facilities and infrastructure; local economy; and buildings). – Historical damage to buildings. – The area's natural floodplain functions. – Future development and redevelopment. – Future flooding conditions due to climate change. For a multi-jurisdictional plan, you must describe each item for each community.
Step 6. Set goals	**C3. Mitigation goals**	*Prerequisites:* ▪ This is basically the same as sub-element C3: set mitigation goals. Goals can be broad, but must address all flood-related problems in Step 5.

CRS Step[4]	Local Hazard Mitigation Planning Element[5]	Crosswalk Details
Step 7. Review possible activities	**C1. Capability assessment** **C2. NFIP participation and compliance** **C4. Mitigation strategy**	*Prerequisites:* ▪ Review and consider preventive activities. ▪ The plan needs to discuss what was examined and why certain actions were recommended. *Key Differences:* ▪ When describing your mitigation strategy, you MUST describe the actions you considered, the actions you chose, and your reasoning for deciding why each activity was appropriate or not for the community and its flood problems. ▪ Mitigation planning and the CRS have lists of six types of mitigation actions/activities. These lists differ. *Maximize Points:* ▪ Review whether the community's floodplain management regulatory standards are sufficient for current and future conditions, as discussed under CRS Steps 4 and 5. ▪ Review if activities protect natural and beneficial floodplain functions. More points are given for reviewing multiple categories of flood mitigation measures. Full credit is given if you identify and discuss measures from all six flood mitigation categories **Commonly Missed:** Missing CRS Step 7 is the most common reason that FEMA-approved mitigation plans are capped at 50 CRS points. Many hazard mitigation plans omit this discussion. The planning staff may have done such a review, but for CRS credit, the plan document must describe the review. Omitting the review pieces of your process results in no credit for CRS Step 7.

CRS Step[4]	Local Hazard Mitigation Planning Element[5]	Crosswalk Details
Step 8. Draft an action plan	**C5.** Mitigation prioritization	*Prerequisites:* ▪ There must be an action item for each goal listed in CRS Step 6. ▪ Actions must be prioritized. **Commonly Missed:** Mitigation actions need to be tied to goals. Every goal needs at least one action associated to it. *Key Differences:* ▪ CRS steps are more specific than the local hazard mitigation plan requirements. *Maximize Points:* ▪ Full credit is given for an action plan with actions in five of the six flood mitigation categories. ▪ More credit is offered for including policies and procedures for post-disaster redevelopment and mitigation in the action plan, as well as for action items that mitigate the effects of other natural hazards.
Step 9. Adopt the plan	**F1.** Plan adoption **F2.** Multi-jurisdictional plans – plan adoption by each participant	*Prerequisites:* ▪ Adoption must be in the form of a resolution or other formal document. It must be voted on by the community's governing body. – A multi-jurisdictional plan must be adopted by the governing body of each community seeking CRS or multi-hazard mitigation plan credit points. *Key Differences:* ▪ Most local hazard mitigation plans are adopted via formal documentation. Other forms of adoption are allowed for local hazard mitigation plans. *Maximize Points:* Communities are encouraged to send the draft plan to their Insurance Services Office, Inc. (ISO)/CRS specialist for a technical review and preliminary scoring. They should also send it to the state emergency management agency and FEMA for a courtesy review.

CRS Step[4]	Local Hazard Mitigation Planning Element[5]	Crosswalk Details
Step 10. Implement, evaluate, and revise	**D1.** Continued public participation **D2.** Plan monitoring, evaluation, and update **D3.** Integration of the local hazard mitigation plan	*Prerequisites:* ▪ The plan must describe how, when and by whom the plan will be monitored, evaluated and revised. ▪ Progress toward plan implementation must be evaluated at least every year. – The procedures for doing this must be explained in the plan document. The evaluation report must be made available to the media and the public. – An evaluation report must be prepared and distributed to the governing body, the media and the public. It must be submitted to the ISO with the community's recertification package. ▪ The plan must be updated every 5 years. ▪ The community must submit a copy of its plan update at least every 5 years. *Key Differences:* ▪ A local hazard mitigation plan requires you to discuss the evaluation process; the CRS requires proof that evaluation occurs each year. *Maximize Points:* ▪ To encourage continued public involvement, more points are given for having the evaluation report prepared by the CRS Step 2(a) planning committee. ▪ Once the plan is adopted, more points are given for more frequent committee meetings during the year. These meetings are to review progress and recommend revisions. ▪ Multi-hazard mitigation plans must include a process for how the community will integrate the requirements of the plan in other community plans. These other plans can include capital improvement, zoning ordinance, and the general/comprehensive plan. **Commonly Missed:** The plan must include proof that evaluation occurred each year.

Note that specific requirements for other CRS steps dovetail with those of Element E (Plan Update) and sub-elements E1 and E2. **Adequately addressing CRS Steps 4, 5, 6, 7 and 8 will meet the requirements of E1 and E2.** The connections with the plan update requirements are described below:

CRS Step	Local Hazard Mitigation Planning Element	Crosswalk Details
Step 4. Assess the hazard **Step 5.** Assess the problem	**E1.** Changes in development	*Prerequisites: None* ▪ With a plan update, hazard and problem assessments must be reviewed and brought up to date. They must account for: – Completed mitigation projects. – Increased development in the floodplain or watershed.
Step 6. Set goals **Step 7.** Review possible activities **Step 8.** Draft an action plan	**E2.** Mitigation strategy progress and changes in priorities	*Prerequisites: None* ▪ With a plan update, the original plan's goals must be reviewed to determine if they are still appropriate (given the revisions to Steps 4 and 5). ▪ With a plan update, each activity recommended by the previous plan must be discussed, along with the status of implementation. ▪ With a plan update, the action plan must be revised to account for projects that have been completed, dropped or changed. It must also account for changes in the hazard and problem assessments.

Table 2. Categories of Mitigation Actions

Types of Mitigation Planning Actions	CRS Categories of Flood Mitigation Activities
▪ Local plans and regulations	1. Preventive measures (e.g., codes)
▪ Structure and infrastructure projects	2. Property protection (e.g., elevation)
▪ Natural systems protection	3. Natural resource protection
▪ *Not included**	4. Emergency services
▪ Structure and infrastructure projects	5. Structural flood control projects
▪ Education and awareness programs	6. Public information

Types of Mitigation Planning Actions	CRS Categories of Flood Mitigation Activities
See Task 6 in the handbook.	See Table 6 for an expanded list in the Mitigation Planning and the Community Rating System Key Topics Bulletin.
**FEMA mitigation planning guidance calls for actions that "reduce or eliminate long-term risk to people and property from hazards and their impacts." As such, programs like flood warning and response and other emergency operations are not included.*	

Risk Assessment

Worksheet 2: Hazard Identification

Use this worksheet to identify which hazards can affect your community. Not all hazards apply to the planning area. For the ones that do, describe how they have been an issue in the past, or if they are a future concern.

Instructions: Describe where there may be recurring problems that you would like to see addressed.

Hazard	Is this a hazard for your community? Yes/No	If yes, briefly describe how. Think about specific locations or recurring issues that you know of in your community.
Avalanche		
Dam Failure		
Drought		
Earthquake		
Erosion		
Expansive Soils		
Extreme Cold		
Extreme Heat		
Flood		
Hail		
Hurricane		
Landslide		

Hazard	Is this a hazard for your community? Yes/No	If yes, briefly describe how. Think about specific locations or recurring issues that you know of in your community.
Lightning		
Sea Level Rise		
Severe Wind		
Severe Winter Weather		
Storm Surge		
Subsidence		
Tornado		
Tsunami		
Wildfire		
Are there additional hazards that you would like to include? Add them here.		

Worksheet 3: Identifying Vulnerable Assets

Look back at the Hazard Identification Worksheet where you described issues that you have with the identified hazards. We are now going to look at specific community assets that can be affected by the identified hazards.

Instructions: For the hazards that affect your community, identify two to three examples of assets that can be affected by the identified hazards.

Vulnerable Assets	**What makes this group/asset vulnerable during hazards? Have there ever been issues with recovery after an event?**
People (Residents, workers, visiting populations, and socially vulnerable populations like seniors, individuals with disabilities, lower-income individuals, etc.)	
Structures (Community centers, historic places, planned capital improvement)	
Economic Assets (Major employers, primary economic sectors, key infrastructure like telecommunications networks)	

Vulnerable Assets	**What makes this group/asset vulnerable during hazards? Have there ever been issues with recovery after an event?**
Natural, Historic and Cultural Resources (Areas of conservation, beaches, parks, critical habitats)	
Critical Facilities and Infrastructure (Hospitals, law enforcement, water, power)	
Community Activities (Major local events such as festivals or economic events like farming or fishing)	

Vulnerable Assets	What makes this group/asset vulnerable during hazards? Have there ever been issues with recovery after an event?
Are there other assets that you can think to include?	

Risk Assessment Starter Kit

The risk assessment is the most data-heavy part of the mitigation plan. It can be hard to find all the information you need. This starter kit provides some basic resources to help you find data to start building your risk assessment.

PREVIOUS HAZARD EVENTS

NOAA National Centers for Environmental Information Storm Events Database

This database contains records for weather-related hazards. You can search through it by state and county. Click on individual events to view a short narrative that you can use to supplement hazard profiles. Note that records are more complete after 1996.

Federal Disaster Declarations for States and Counties

This page contains an interactive tool. You can use it to explore historic federal disaster declarations by state, county, hazard, and year. An easy-to-use graphic lets you filter by state, county, and hazard type. You can also download the full dataset. Please contact your SHMO for specific disaster declarations in your state.

IDENTIFYING COMMUNITY VULNERABILITY

Hazus

Hazus provides tools and data to help you estimate risk from earthquakes, floods, tsunamis, and hurricanes. Hazus models combine expertise from many disciplines to create actionable risk information. Risk assessment resources from the Hazus program are always freely available and transparently developed. Hazus requires an ArcGIS license to use.

Hazus Loss Library

This is a database for natural hazard risk information. Here, you can search for a historic event, planning scenario, or location like a state, county, or jurisdiction. Then, you can view previously performed analyses and downloadable products.

Homeland Infrastructure Foundation-Level Data

This site provides open-source local data for common community assets. You can download these data as CSVs, KMLs, or Shapefiles. To support application development and data visualization, you can also access them via web services. This can help you find specific physical community assets.

U.S. Census QuickFacts

The U.S. Census provides basic information about each community. You can use this information to find the populations that are most at risk.

WildfireRisk.org

This free site has interactive maps, charts, and resources. These tools help communities learn their risks to wildfires.

National Inventory of Dams

This database contains information for more than 91,000 dams. It has more than 70 data fields for each dam. This includes the dam's location, size, purpose, type, last inspection, and regulatory facts. More data are available for some dams. This could be a general description of the dam, a summary of known issues, and planned actions to address those issues. Maps that show possible flooding near dams, also called flood inundation maps, are available for some dams. These maps show where water may go if a dam-related issue occurs. They can also help people who live and work near dams take protective actions.

REPETITIVE LOSS INFORMATION

Flood Insurance Data and Analytics

Data on repetitive loss properties are available from local floodplain administrators and the state floodplain coordinator. If data are not available, the plan can include an ***estimate*** of the numbers and types of repetitive loss properties. Repetitive loss information is Privacy Act protected. As such, plans should never include individual names, addresses and claim information. However, plans can include aggregated figures (e.g., the total number of repetitive loss properties by jurisdiction).

HAZARD EXTENT (MAGNITUDE) SCALES

Below are some scales for common hazards. This is not a full list of all hazards or possible extents. There are other ways to address extent in your plan.

Hazard	Sub-category	Resource	Description
Dam Failure	-	National Dam Safety Program hazard classifications	This hazard potential classification system for dams is clear, concise, and adaptable to any agency's current system. It lists three classification levels – low, significant, and high – in order of increasing adverse incremental consequences.
Drought	-	U.S. Drought Monitor Scale	The drought scale is much like those that rate hurricanes and tornadoes. The "D-scale" speaks to how unusual a drought episode is.

Hazard	Sub-category	Resource	Description
		Palmer Drought Severity Index	The Palmer Drought Severity Index is a measure of relative dryness or wetness that affects water sensitive economies. It provides data in graphical and tabular formats for the contiguous United States.
		Standardized Precipitation Index	This index characterizes drought on a range of timescales that relate to soil moisture, groundwater, and reservoir storage. It can be compared across regions with different climates.
Earthquake	-	Modified Mercalli Intensity Scale	This scale has many levels to indicate a range of effects. These range from slight shaking to catastrophic destruction. It does not have a mathematical basis. It is a subjective ranking based on observed effects.
		Shakemap	These maps provide near-real-time visual data of ground motion and shaking intensity after significant earthquakes.
Coastal Erosion	Sea Level Rise	Sea Level Trends (millimeter per year)	The sea level trends measured by tide gauges show local relative sea level (RSL) trends. They do not show the global sea level trend. Tide gauge measurements are made with respect to a local fixed reference on land. RSL combines sea level rise and the local vertical land motion.
	Sea Level Rise	Coastal Vulnerability Index (CVI)	This classification is based on geomorphology, regional coastal slope, tide range, wave height, relative sea level rise, and shoreline erosion and accretion rates. These factors and how they relate to one another give a broad overview of regions where sea level rise will likely cause physical changes.
Extreme Temperatures	Extreme Cold	Wind Chill Index	This index uses science and computer modeling to provide a clear and accurate formula for calculating the dangers from winter winds and freezing temperatures.
	Extreme Heat	Heat Index	This index measures how hot it feels when relative humidity is factored in with the actual air temperature.

Hazard	Sub-category	Resource	Description
Flood	-	100-year floodplain definition and location	FEMA produces these flood maps. They are available on the Map Service Center (MSC). They are the official public source for flood hazard information that supports the National Flood Insurance Program. The MSC hosts official flood maps and a range of other flood hazard products.
Hurricane	-	Saffir-Simpson Hurricane Wind Scale	This scale uses a 1 to 5 rating based on a hurricane's sustained wind speed. It also estimates potential property damage.
Landslide	-	Landslide incidence	This map inventories landslides and confidence levels in the United States.
Radon	-	Picocuries Per Liter pCi/L	This website describes how radiation from radon is measured using picocuries per liter of air (pCi/L). A pCi is a measure of the rate of radioactive decay of radon.
Severe Weather	Hail	Hailstone size	This scale shows an object-to-size conversion for hail to use in measurement and communication.
	High Winds	Beaufort Wind Scale	This scale is an empirical measure. It relates wind speed to observed conditions at sea or on land.
	Lightning	Annualized Frequency	Annualized frequency is the expected frequency or probability of a hazard occurrence per year.
	Rain	Rainfall per duration	These interactive maps provide precipitation frequency estimates and related information.
Tornadoes	-	Enhanced Fujita Scale	This scale shows the intensity of tornadoes based on the damage they cause.
Volcanoes	-	Volcanic Explosivity Index (VEI)	The Volcanic Explosivity Index (VEI) describes the size of explosive volcanic eruptions based on magnitude and intensity.
Wildfire	-	NWCG Size Class	This scale classifies wildfires based on the number of acres burned.
Winter Storm	Ice Storm	Sperry-Piltz Ice Accumulation Index	This index predicts the projected footprint, total ice buildup, and potential damage from ice storms.

Hazard	Sub-category	Resource	Description
	Nor'easters	Regional Snowfall Index	This scale ranks snowstorms on a scale from 1 to 5. This is based on the size of the storm, the amount of snowfall, and how these factors may affect populations.
	Snow	Snowfall per duration	This tool estimates snowfall in the recent past by combining several datasets into a single analysis.

CLIMATE CHANGE RESOURCES

Addressing Future Climate, Population, and Land Use in Mitigation Planning | FEMA.gov

FEMA Mitigation Planning Program's foundational webinar to guide state, tribal, territorial and local governments in using data, tools and resources to address climate change, population change, and land use change in mitigation planning.

The Climate Explorer

The National Environmental Modeling and Analysis Center (NEMAC) created the Climate Explorer website. Its goal is to help users explore how climate is projected to change in any county in the United States and its territories. It provides maps and graphs to help users understand the data. It also contains resources to help plan for the impacts of climate change. These resources help users learn where hazards will affect socially vulnerable populations.

Climate Mapping for Resilience and Adaptation (CMRA)

This website has many tools for mapping and understanding hazards that relate to climate change. Users can access the CMRA Assessment Tool to view how climate change will affect their area. This tool covers geographies that range in scale from counties to census tracts to tribal lands. It even lets users search by address to see what climate change-related hazards may affect their homes. The CMRA site also has funding opportunities and resources to help users plan for, fund, and carry out hazard mitigation activities.

Climate Risk and Resilience Data Portal (ClimRR)

This tool empowers individuals, governments, and organizations to examine simulated future climate conditions at mid- and end-of-century for a range of climate perils. At some point in the future, ClimRR layers will be integrated into FEMA's Resilience Analysis and Planning Tool (RAPT), to demonstrate specific and local-scale impacts to people and infrastructure across the country. The

portal will contain socio-demographic resilience indicators and open-source infrastructure information. This tool was developed in collaboration with Argonne National Lab, AT&T, and FEMA to provide detailed downscaled climate modeling and provide a user-friendly platform for local use.

Coastal Risk Screening Tool

Climate Central developed this tool. The tool helps users see the impact that sea level rise will have on their communities over time. It uses global elevation data and the most up-to-date climate change projections to show where and when sea level rise is most likely to impact coastal areas. This can help planning teams prioritize mitigation actions that relate to sea level rise where they are needed most.

Digital Coast

The Digital Coast program is NOAA's home for resources that relate to a changing climate and growing populations. It includes data, tools, training, and stories of resilience. While the focus is on the coast, the data, resources and training topics are not limited to coastal communities. For example, the Digital Coast houses land cover, wetlands, and soil survey data from across the nation.

FEMA's Resources for Climate Resilience

This document outlines the different resources and programs available to address climate resilience nationwide. It covers resources that can help you identify and assess climate risk, plan for it, and fund climate adaptation and mitigation activities. Keep in mind this list of resources is just a starting point. Like most hazard data, climate change and resilience data are best at the local level. Many local and regional jurisdictions have their own approved standards.

National Climate Assessment

Every four years, the U.S. Global Change Research Program delivers the National Climate Assessment to Congress and the president. The next report is due for release in late 2023. The assessment gives an in-depth look at climate change impacts on the United States. It is not a raw data resource. It is a discussion and report on how the climate is changing and its impacts on regions and sectors. The report also presents an overview of response strategies, including mitigation.

NOAA's Climate.gov

This website provides timely and authoritative data about climate science, adaptation, and mitigation. It includes a Climate Data Primer. The primer has basic information to help people understand and explore climate data. Climate.gov also includes teaching resources, maps, and data.

NOAA's Sea Level Rise Report

The 2022 Sea Level Rise Technical Report provides the most up-to-date sea level rise projections. The report released by the National Ocean Service makes updated projections available through

2150 for all U.S. coastal waters. A companion Application Guide is available to help users apply and integrate the report into local planning and adaptation decisions. The guide, penned by professionals with expertise on applying sea level rise to local level planning, helps readers wade through considerations and arrive at what's best for their community. There are several additional resources available for understanding and applying the updated sea level rise projections.

Planning for Urban Heat Resilience

The American Planning Association (APA) developed the Planning for Urban Heat Resilience guide. Its goal is to help planners understand and prepare for the risks of extreme heat. It covers how to include equity when planning for extreme heat mitigation and adaptation. It also shows how planners can mitigate and manage heat through policies, plans, and mitigation activities.

Regional Resilience Toolkit

FEMA, the U.S. Environmental Protection Agency (EPA), and the Metropolitan Transportation Commission/Association of Bay Area Governments (MTC/ABAG) worked together to make the Regional Resilience Toolkit (RRT). The RRT helps regions as they plan for disasters. It does this by showing jurisdictions, counties, and other regional entities how to work across multiple jurisdictions and with non-governmental partners to improve climate resilience.

Sixth Assessment Report and Data Distribution Center

The Intergovernmental Panel on Climate Change (IPCC) is the United Nations body for assessing the science related to climate change. Their Fifth Assessment Report evaluates the scientific basis of climate change. It includes its impacts and future risks. It also has options for adaptation and mitigation. The Data Distribution Center provides historic climate, socio-economic, and environmental data and projections for future scenarios. Note: The IPCC is currently in its Sixth Assessment cycle. Check the IPCC's website often for the most recent data and tools.

State Climate Summaries

This site provides a high level summary of each state's risk to climate change. There are short key talking points, a short narrative, and data organized into charts. This provides a basis for understanding key climate challenges for each state and serves as a starting point for deeper analysis.

U.S. Climate Resilience Toolkit

The toolkit provides tools and information to help communities grow resilience and manage climate-related risks. It pulls information from across the federal government to a single location. The toolkit connects users to climate tools, data and visualization. It also offers training on how to use those tools.

U.S. Global Change Research Program

This interagency program shares resources, reports, data, multimedia, and other factors that could inform a risk assessment. It has many visualizations of global climate change from member agencies. These can help you evaluate and communicate future risk. The program also maintains a library of scientific assessments, annual reports, research plans, fact sheets, brochures, and other resources.

HISTORICAL RISK RESOURCES

National Risk Index (NRI)

The National Risk Index (NRI) is a dataset and online tool that identifies communities most at risk for 18 natural hazards, some of which may be exacerbated by climate change. The NRI visualizes risk metrics, includes data on expected annual losses, and incorporates social vulnerability and community resilience data. It covers geographies ranging from counties to census tracts.

Wildfire Risk to Communities

This tool, developed by the U.S. Department of Agriculture and the U.S. Forest Service, is a free, easy-to-use website with interactive maps, charts, and resources to help communities understand, explore, and reduce wildfire risk.

EQUITY RESOURCES

FEMA Community Resilience Index (CRI)

The FEMA Community Resilience Index (CRI) is a composite index of 22 indicators commonly used across 14 peer-reviewed community resilience methodologies (used in 5 or more methodologies). This index provides a relative composite value by county and by census tract, measured as an average of counts of standard deviations from the national mean for each indicator. The FEMA CRI and each individual indicator are included as a GIS data layer in the Resilience Analysis and Planning Tool (RAPT).

U.S. Census Bureau Community Resilience Estimates (CRE)

Community resilience is the capacity of individuals and households within a community to absorb the external stresses of a disaster. The 2019 Community Resilience Estimates (CRE) are produced using information on individuals and households from the 2019 American Community Survey (ACS) and the Census Bureau's Population Estimates Program (PEP). Explainer Webinar and Slide Deck: https://www.census.gov/data/academy/webinars/2021/community-resilience-estimates.html

Addressing Social Equity Through Natural Hazards Mitigation Planning

This is a training from FEMA Region 10. It gives ways to address equity issues when developing and carrying out a community's hazard mitigation plan.

Building Alliances for Equitable Resilience

This document from the Resilient Nation Partnership Network gives guidelines for how to break down barriers and embrace diverse points of view to achieve whole-community resilience.

Climate and Economic Justice Screening Tool

The Council on Environmental Quality (CEQ) developed this tool. It identifies disadvantaged communities at a census tract level through standardized, nationally consistent data. It considers communities disadvantaged if they are in a census tract that meets the threshold for at least one of the tool's categories of burden and a corresponding economic indicator. It does the same if they are on the lands of a federally recognized tribe.

EJScreen: Environmental Justice Screening and Mapping Tool

The Environmental Protection Agency's (EPA) EJScreen tool provides users with a nationwide dataset. This resource combines environmental and demographic data. By combining these two types of data, the tool creates maps that show where socially vulnerable populations and underserved communities may face adverse environmental impacts. Such impacts include those from wildfires, drought, coastal flood hazards, extreme precipitation events and sea level rise. The platform helps users learn where these impacts will occur and which demographics they will affect. The tool can help plan for targeted interventions.

Environmental Justice Guidance

This Government Accountability Office document has information about federal efforts that relate to better planning and coordination with regard to environmental justice.

Guide to Expanding Mitigation: Making the Connection to Equity

This document is one of FEMA's Guides to Expanding Mitigation. It helps mitigation planning partners learn more about equitable mitigation. It also helps them learn how they can use it within communities and plans. The guide defines social vulnerability and the differences between equity and equality.

Guide to Expanding Mitigation: Making the Connection to Older Adults

FEMA and the American Association of Retired Persons (AARP) developed this document. It highlights how including older adults in mitigation planning efforts can create a thorough mitigation strategy that serves the whole community. As a group, older adults often suffer the highest number of fatalities during disaster events. Prioritizing their needs before and after disasters can help to mitigate that risk.

Guide to Expanding Mitigation: Making the Connection to People With Disabilities

This resource is part of the FEMA Guide to Expanding Mitigation Series. It outlines how to include people with disabilities not only in disaster preparedness and response, but also in long-term risk reduction efforts.

In the Eye of the Storm: A People's Guide to Transforming Crisis & Advancing Equity in the Disaster Continuum

The NAACP created this document. It provides six suggestions to help communities build equity into the four phases of emergency management.

Planning for Equity Policy Guide

The American Planning Association made this guide. It outlines best practices for working the principles of equity, inclusion, diversity and justice into planning processes and policies.

Social Vulnerability Index (SVI)

The Centers for Disease Control (CDC) and Agency for Toxic Substances and Disease Registry (ATSDR) partnered to create a nationwide Social Vulnerability Index (SVI). This interactive mapping tool shows how 15 United States census variables can combine to make some populations more vulnerable to adverse impacts. Such impacts include those from climate change. This mapping tool shows social vulnerability down to the census tract level. This allows for precise analysis. The SVI site also lets users download data that relate to social vulnerability for their own analyses. Assessing social vulnerability is a key step in learning how shifts in risk exposure caused by climate change can have worse effects on socially vulnerable populations.

GEOSPATIAL GENERAL DATA AND TOOLS

FEMA Resilience Analysis & Planning Tool (RAPT)

The Resilience Analysis and Planning Tool (RAPT) developed by FEMA and Argonne National Lab is a free GIS web mapping tool that allows federal, state, local, tribal, and territorial emergency managers, and other community leaders to examine the interplay of people, infrastructure, and hazards – including real-time weather forecasts, historic disasters and estimated annualized frequency of hazard risk.

ArcGIS Living Atlas of the World

This online Geographic Information Systems (GIS) platform provides free, open-source tools and datasets. These tools and data resources can be used to create spatial visualizations of data and can also be used to perform data analysis. The resulting analyses and visualizations can help to communicate climate change impacts to a general audience and can be used for integrating climate change considerations into HMPs.

Mitigation Strategy

Worksheet 4: Capability Assessment

Local mitigation capabilities are existing authorities, policies, programs, and resources that reduce hazard impacts or could help to carry out hazard mitigation activities. Use this worksheet to list which capabilities your community already has and how they can be built on. No community will have all of these capabilities. You may work with partners or stakeholders who can supplement your local programs and staff.

In the tables below, note which capabilities apply. Consider some of the prompts to describe a little bit about each capability.

PLANNING AND REGULATORY

Planning and regulatory capabilities are the plans, policies, codes, and ordinances that prevent and reduce the impacts of hazards.

Capability Type	In Place	Notes
Plans	**Yes/No**	**Does the plan address hazards? Can the plan be used to implement mitigation actions? When was it last updated?**
Capital Improvements Plan		
Climate Change Adaptation Plan		
Community Wildfire Protection Plan		
Comprehensive/Master Plan		
Continuity of Operations Plan		
Economic Development Plan		
Land Use Plan		
Local Emergency Operations Plan		
Stormwater Management Plan		
Transportation Plan		

Capability Type	In Place	Notes
Other (describe)		
Land Use Planning and Ordinances	**Yes/No**	**Is the ordinance an effective measure for reducing hazard impacts? Is it adequately administered and enforced?**
Acquisition of land for open space and public recreation use		
Building code		
Flood insurance rate maps		
Floodplain ordinance		
Substantial Damage Plan		
Natural hazard specific ordinance (stormwater, steep slope, wildfire)		
Subdivision ordinance		
Zoning ordinance		
Other		
How can these capabilities be expanded and improved to reduce risk?		

ADMINISTRATIVE AND TECHNICAL

Administrative and technical capabilities include staff and their skills. They also include tools that can help you carry out mitigation actions. If you do not have local staff, consider how state and regional partners can help.

Capability Type	In Place	Notes
Administrative	**Yes/No**	**Is staffing adequate to enforce regulations?** **Is staff trained on hazards and mitigation?** **Is coordination between agencies and staff effective?**
Chief Building Official		
Civil Engineer		
Community Planner		
Emergency Manager		
Floodplain Administrator		
GIS Coordinator		
Planning Commission		
Other		
Technical	**Yes/No**	**Has capability been used to assess/mitigate risk in the past?**
Grant writing		
Hazard data and information		
GIS analysis		
Mutual aid agreements		
Other		
How can these capabilities be expanded and improved to reduce risk?		

FINANCIAL

Note whether your jurisdiction has access to or is eligible to use the following funding resources for hazard mitigation.

Capability Type	In Place	Notes
Funding Resource	**Yes/No**	**Has the funding resource been used in past and for what type of activities? Could it be used to fund future mitigation actions?**
Capital improvements project funding		
Community Development Block Grant		
Federal funding programs (non-FEMA)		
Fees for water, sewer, gas, or electric services		
Impact fees for new development		
State funding programs		
Stormwater utility fee		
Other		
How can these capabilities be expanded and improved to reduce risk?		

EDUCATION AND OUTREACH

Identify education and outreach programs and methods already in place that could be used to carry out mitigation activities and communicate information about hazards.

Capability Type	In Place	Notes
Program/Organization	Yes/No	How widespread are each of these in your community?
Community newsletters		

Capability Type	In Place	Notes
Hazard awareness campaigns (such as Firewise, Storm Ready, Severe Weather Awareness Week, school programs, public events)		
Local news		
Organizations that represent/advocate for/interact with underserved and vulnerable communities		
Social media		
Other		
How can these capabilities be expanded and improved to reduce risk?		

Worksheet 5: National Flood Insurance Program (NFIP)

Use this worksheet to collect information on your community's participation in and continued compliance with the NFIP. Also, note areas for improvement that could be potential mitigation actions. State the source of information if different from the one included.

NFIP Topic	Source of Information	Comments
Staff Resources		
Who is responsible for floodplain management in your community? Do they serve any roles other than Community Floodplain Administrator (FPA)?		
Is the Community FPA or NFIP Coordinator a Certified Floodplain Manager?	Community FPA	
Is floodplain management an auxiliary function?	Community FPA	
Explain NFIP administration services (e.g., permit review, GIS, inspections, engineering capability).	Community FPA	
What are the barriers to running an effective NFIP program in the community, if any?	Community FPA	
Insurance Summary		
How many NFIP policies are in the community? What is the total premium and coverage?	State NFIP Coordinator or FEMA NFIP Specialist	
How many claims have been paid out in the community? What is the total amount of paid claims? How many of the claims were for substantial damage?	FEMA NFIP or Insurance Specialist	
How many structures (residential and non-residential) are exposed to flood risk within the community?	Community FPA	
Are there any repetitive or severe repetitive loss structures in the community?		

NFIP Topic	Source of Information	Comments
Describe any areas of flood risk with limited NFIP policy coverage.	Community FPA and FEMA Insurance Specialist	
How does the community teach property owners or other stakeholders about the importance flood insurance?		
What digital sources (like the FEMA Map Service Center, National Flood Hazard Layer) or non-regulatory tools does the community use?		
Compliance History		
Is the community currently suspended from the NFIP?	State NFIP Coordinator, FEMA NFIP Specialist, community records	
Are there any outstanding compliance issues? (i.e., current violations)?		
How does the community identify substantially damaged/improved structures? What is the process to make sure these structures are brought into compliance?		
When was the most recent Community Assistance Visit (CAV or Community Assistance Contact (CAC)?		
Is a CAV or CAC scheduled or needed?		
Regulation		
When did the community enter the NFIP?	Community Status Book	
Are the FIRMs digital or paper?	Community FPA	
How does the community enforce local floodplain regulations and monitor compliance?		

NFIP Topic	Source of Information	Comments
Do floodplain development regulations meet or exceed FEMA or state minimum requirements? If so, in what ways?	Community FPA	
How are Letters of Map Change (LOMCs) tracked and compiled?		
Explain the permitting process.	Community FPA, State, FEMA NFIP Flood Insurance Manual Community FPA, FEMA CRS Coordinator, ISO representative CRS manual	
Community Rating System (CRS)		
Does the community participate in CRS? If so, what is the community's CRS Class Ranking?	Community FPA, State, FEMA NFIP	
What categories and activities provide CRS points, and how can the class be improved?	Flood Insurance Manual	
Does the plan include CRS planning requirements?	Community FPA, FEMA CRS Coordinator, ISO representative, CRS manual	

NEXT STEPS

If you were unsure or answered “no” to any of these questions, consider short- and long-term action items to address them. If you need help identifying trainings or other resources, contact your State Hazard Mitigation Officer or State NFIP Coordinator.

RESOURCE LIST

FEMA Substantial Damage Estimator Tool

National Flood Hazard Layer

FEMA Flood Map Service Center

Worksheet 6: Hazard Information Integration

OVERVIEW

Making sure that your local hazard mitigation plan aligns with other existing plans is vital. Such alignment can help you make sure policies and programs do not conflict. It can also help you make sure policies and programs complement and support each other. This can serve to create a more hazard-resistant and resilient community.

STEP 1: IDENTIFY RELEVANT PLANS AND POTENTIAL PARTNER AGENCIES

First, find out what local plans already exist and who is responsible for those plans. You can do so by searching online or visiting your local government's or local planning commission's website. You could also consult colleagues from other local agencies. As you do this, it is a good idea to log each plan in a matrix, as shown below.

Table 1. Example matrix of local plans and partners.

Example Plan	Example Agency Responsible
Comprehensive Plan	City Planning Commission
Sustainability Action Plan	Office of Sustainability
Transportation Plan	Transportation Planning Authority
Stormwater Master Plan	Water Department
Emergency Response and Recovery Plan	Office of Emergency Management
Subdivision Regulations	Zoning Board, City Planning Commission
Zoning Ordinances	Zoning Board, City Planning Commission

STEP 2: IDENTIFY GAPS AND OVERLAPS

The next step is to look at each plan and check if the proposed policies or actions align or conflict with those in the local hazard mitigation plan. To do this, you can expand upon the matrix you have already developed. Add columns that identify:

- Specific questions about actions or policies that relate to those in the local hazard mitigation plan.
- Whether those actions or policies conflict with or complement those in the local hazard mitigation plan. These represent either gaps in, or overlaps with, the local hazard mitigation plan.

See the table below for an example of this expanded matrix.

Table 2. Example matrix of plans, agencies, and questions to ask.

Example Plan	Example Agency/Agencies Responsible	Question	Y/N	Gap or Overlap?
Comprehensive Plan	City Planning Commission	Does the future land-use map clearly identify natural hazard areas?		
		Do the land use policies discourage development or redevelopment within natural hazard areas?		
		Does the plan leave enough space for expected future growth in areas outside natural hazard areas?		
Transportation Plan	Transportation Planning Authority	Does the transportation plan limit access to hazard areas?		
		Is transportation policy used to guide growth to safe locations?		
		Are movement systems designed to function under disaster conditions (e.g., evacuation)?		
		Does the transportation plan promote compact, mixed-use development near transit hubs and away from high hazard areas?		
Zoning Ordinances	Zoning Board, City Planning Commission	Does the zoning ordinance conform to the comprehensive plan in terms of discouraging development or redevelopment within natural hazard areas?		
		Does the ordinance contain natural hazard overlay zones that set conditions for land use within such zones?		
		Does the ordinance prohibit development within, or filling of, wetlands, floodways, and floodplains?		
		Is a zoning code in place to encourage resilient development through density bonuses for projects outside of natural hazard areas?		

Example Plan	Example Agency/Agencies Responsible	Question	Y/N	Gap or Overlap?
		Do rezoning procedures recognize natural hazard areas as limits on zoning changes that allow greater intensity or density of use?		
		If applicable, is there a wildland-urban interface development code in place to prohibit or limit development in high wildfire risk areas?		
Overlay Districts	Zoning Board, City Planning Commission	Is a Conservation Overlay Zoning District in place to help protect environmentally sensitive areas?		
		Is a Coastal Flood Resilience Overlay District in place to encourage development away from coastlines and floodplains?		
		Are there Climate Hazard Overlay Zones in place to identify natural hazard risk areas and assign appropriate zoning ordinances to mitigate or adapt to those hazards?		
Subdivision Regulations	Zoning Board, City Planning Commission	Do the subdivision regulations restrict the subdivision of land within or next to natural hazard areas?		
		Do the regulations provide for conservation subdivisions or cluster subdivisions to conserve environmental resources?		
		Do the regulations allow density transfers where hazard areas exist?		
Stormwater Master Plan	Water Department	Does the stormwater master plan promote the use of porous building materials through incentive programs?		
		Does the stormwater master plan include green stormwater infrastructure in impaired watersheds?		
		Does the stormwater master plan include stormwater management best practices in areas that flooding affects the most?		

Example Plan	Example Agency/Agencies Responsible	Question	Y/N	Gap or Overlap?
		Does the placement of stormwater management projects prioritize socially vulnerable communities?		
Resilience Plan	Office of Resilience and Adaptation	Does the plan identify sea level rise inundation zones, high wildfire risk areas, storm surge inundation zones, or other areas at high risk of natural disaster impacts?		
		Does the plan develop actions to recover from natural hazard events? Do those actions align with those the local hazard mitigation plan identifies?		
		Does the plan identify areas in which socially vulnerable populations and underserved communities have a high risk of exposure to natural hazards? If so, do the actions identified to address that risk align with those in the local hazard mitigation plan?		
Local Environmental Plan	Environmental Planning Authority	Does the plan identify and map environmental systems that protect development from hazards?		
		Do environmental policies maintain and restore protective ecosystems?		
		Do environmental policies encourage development outside of protective ecosystems?		
Public Health and Safety Plan	Office of Public Health and Safety	Do the goals and policies of the comprehensive plan relate to those of the local hazard mitigation plan?		
		Do the plan's growth and development policies clearly address safety?		
		Does the monitoring and implementation section of the plan cover safe growth objectives?		
Parks and Recreation Plan	Office of Parks and Recreation	Does the plan prioritize open green spaces? Are such spaces planned in areas with high impervious surface coverage?		

Example Plan	Example Agency/Agencies Responsible	Question	Y/N	Gap or Overlap?
		Does the plan keep in mind the need for tree cover to mitigate the urban heat island effect? Are tree cover expansion projects planned in high-heat areas?		
Capital Improvements Plan	Office of Capital Programs	Does the capital improvement program limit spending on projects that would encourage development in areas vulnerable to natural hazards?		
		Do infrastructure policies limit extension of existing facilities and services that would encourage development in areas vulnerable to natural hazards?		
		Does the capital improvement program provide funding for hazard mitigation projects identified in the FEMA Mitigation Plan?		
Climate Action Plan	Office of Resilience and Adaptation, Office of Sustainability	Does the plan have specific and measurable targets for carbon emissions reduction?		
		Does the plan include realistic and actionable strategies for reducing carbon emissions?		
Building Codes	Division of Zoning and Planning	Does the building code have provisions to strengthen or elevate construction to withstand hazard forces?		
		Are there building codes in place that meet or exceed those outlined in the National Flood Insurance Program's guidelines for safe building practices?		
		Do existing building codes include development standards for withstanding storm surge, wind damage, earthquakes, or other relevant natural hazards?		
Economic Development Plan	Economic Development Authority	Do economic development or redevelopment strategies include provisions for mitigating natural hazards?		

Example Plan	Example Agency/Agencies Responsible	Question	Y/N	Gap or Overlap?
Emergency Action Plan	Office of Emergency Management	Is there an adopted evacuation and shelter plan to deal with emergencies from natural hazards?		
		Are evacuation routes located outside of floodplains, sea level rise inundation zones, or liquefaction zones?		
		Are there emergency communication systems in place? Are those systems deployed in areas with the highest potential hazard exposure?		
Integrated Watershed Management Plan	Local Watershed Authority or Water Department	Does the plan include policies that restrict development that would increase downstream flooding?		
		Does the plan include policies that restrict development that would increase sedimentation or erosion?		

STEP 3: IDENTIFY ACTIONS TO ADDRESS GAPS AND LEVERAGE OVERLAPS

You have identified other local plans, the agencies responsible for those plans, and specific elements of those plans that conflict with or complement those developed in the local hazard mitigation plan. Now, you are ready to develop actions to address gaps or leverage points of commonality. To do this, work with agencies responsible for other relevant plans throughout the planning cycle. This helps to make sure that the local hazard mitigation plan and other local plans align appropriately. Methods for aligning plans could include:

- Hold regular meetings with other local agencies to talk about potential areas for alignment or improvement.
- Invite other local agencies to be part of your hazard mitigation planning team. This will let them stay up to date with actions and strategies that you develop. It can also help them develop actions that align with those of the local hazard mitigation plan.
- Send regular email updates to other local agencies to keep them up to date with your planning process and proposed actions, strategies, and projects.
- Send a copy of the first draft of the local hazard mitigation plan to other planning agencies to review early and often in the planning process.

ADDITIONAL RESOURCES

There are many resources for learning about local plan integration and alignment. The following list can help you to form a local hazard mitigation plan that supports other local plans and planning mechanisms, and vice versa.

- Building Resilience Through Plan Integration
- Capability and Capacity Building Actions – Local Planning and Regulations
- Comprehensive Economic Development Strategy and Hazard Mitigation Plan Alignment Guide
- IMD Planning Tool Overview
- Integrating Hazard Mitigation Into Local Planning - Case Studies and Tools for Community Officials
- Plan Integration – Linking Local Planning Efforts
- Plan Integration for Resilience Scorecard Guidebook
- Safe Growth Audits
- Survey of State Land Use Laws and Natural Hazards Laws

Worksheet 7: Mitigation Action Selection

It is crucial to look at all types of actions when developing your plan. Some will move forward, and others that will not. Use this worksheet to capture all your ideas. Even if you do not select an action for implementation, it is still important to document. This way, it is still in the plan and can be referenced later, if needed.

Below are some categories you can use to analyze each action. This will help you determine if you want to select it to carry out. If you do, you can use the Mitigation Action Implementation Worksheet to provide more details about the action.

Life and Safety

- What impact will the project have on businesses, residences, and properties in the planning area?
- Will the project proactively reduce natural hazard risk?

Administrative/Technical Assistance

- Is there sufficient staff to implement the project?
- Is training required for the staff to implement the project?
- Is there political support for the project?
- Does the community have the legal authority to do the project

Project Cost and Economic Factors

- What is the cost of the project?
- Does the community have the funds for the project on the whole or the local match?

Support for Community Objectives

- Does the action advance other objectives or plans, like the capital improvement, economic development, environmental quality, or open space preservation?

Equity

- Will the action adversely affect underserved and socially vulnerable populations?
- Does the action build resilience for underserved and socially vulnerable populations?

Action	**Analysis** (Describe overall feasibility based on general benefits, costs, and any other criteria)	**Selected for Implementation?** (Yes/No)
Local Plans and Regulations (Government authorities, policies, or codes that influence the way land and buildings are developed and maintained)		
EXAMPLE: Hazard County will update its building codes to account for stronger winds.	*Updating the building codes is low-cost and very effective. It may be politically sensitive.*	*Yes*
Structure and Infrastructure Projects (Projects that modify existing infrastructure to remove it from a hazard area or construct new structures to reduce impacts of hazards)		
EXAMPLE: Hazard County will construct a storm shelter at the fairgrounds.	*There is no storm shelter in the county. It is expensive, but the public and county commission want and need it.*	*Yes*
Natural Systems Protection (Actions that minimize damage and losses by preserving or restoring the functions of natural systems)		
EXAMPLE: Hazard County will restore the wetland near the river to help with flooding.	*Restoring the wetlands near the river will help with flooding and restore natural habitats. This is a lengthy process and will need several phases to complete.*	*Yes*
Education and Awareness Programs (Sustained programs to educate the public and decision makers about hazard risks and community mitigation programs)		

Action	**Analysis** (Describe overall feasibility based on general benefits, costs, and any other criteria)	**Selected for Implementation?** (Yes/No)
EXAMPLE: Hazard County will add a section to the monthly newsletter on seasonal hazards.	*The monthly newsletter already exists and reaches a much of the population. It is easy to produce. It does not reach those without internet access, though.*	*Yes*

Worksheet 8: Mitigation Action Implementation

This worksheet will help you identify all the components you need to successfully carry out your mitigation actions. You can do this by looking at previous worksheets that were used in the planning process.

Describing the Action	
Action description Be as specific as you can with what you want to accomplish. Include potential locations where applicable.	
Assessing the Risk	
Risk(s) addressed Describe how the action connects to the risk assessment.	
Implementing the Action	
Cost estimate This can be a rough number. You do not need a quote.	
Potential funding sources Example: FEMA Hazard Mitigation Grant Program (HMGP), local budget for match	
Responsible party Who from the planning team is responsible for carrying out the action?	
Partner agencies (optional) Can any stakeholders help to carry out the action?	

Describing the Action	
Estimated timeline for completion Consider adding specific start and end dates, as applicable. **Short Term** For example, the period for hazard mitigation planning, capital improvements, or jurisdictions budget cycles. **Medium Term** For example, the period for structural projects, regulation, education and outreach, natural systems protections, or comprehensive plans. **Long Term** For example, the period for comprehensive plans, economic development plans, transportation plans, climate action plans, or the lifetime of infrastructure assets.	
Prioritizing the Action (Use only one of the options below. Planning teams should decide which one to use and decide on criteria.)	
Qualitative: This option has you describe the costs, benefits, and how each action fits in with other (for example, high, medium, or low). **Quantitative:** Choose criteria to rank your hazard and assign them a rank (such as +1 or -1).	
Integrating and Aligning the Action	
Integration opportunity Could this action support other local plans or planning mechanisms? Refer to the Hazard Information Integration Worksheet to fill out this section.	

Describing the Action	
Integration status Has this action been worked into any other local plans or planning mechanisms? Refer to the Hazard Information Integration Worksheet to fill out this section.	
Aligning with the state plan Does the action align with any goals or objectives outlined in the state hazard mitigation plan?	

Keeping the Plan Current

Worksheet 9: Action Monitoring Form

Use this form to help identify the status of each action in the plan. This can help you find out if you need other resources to complete it. Completed actions also give you a chance to celebrate the plan's success.

Table 1. Example of Action or Project Evaluation Matrix

Progress Report Period	
Describe the action or project.	
Who is responsible for the action?	
Project status:	☐ Complete ☐ In progress, anticipated completion date: _____ ☐ Not started ☐ Canceled

Progress Report Period	
Has there been any progress with this project so far?	
Are there any obstacles or challenges with this action so far?	
What steps do you need to take to complete this project?	
Other comments:	

Worksheet 10: Plan Update Evaluation Form

For this form, think about the plan as a whole. Think about what has gone well for each part and where it can improve. The plan evaluation process offers a chance to look at the planning process as a whole.

PLANNING PROCESS

Participants

Should new jurisdictions be invited to participate in future plan updates?

How have communities and agencies helped to carry out mitigation actions?

Could anything from the initial planning process be done more efficiently?

Have there been any changes in public support or priorities about hazard mitigation?

Is there anything else you would like to consider?

Public Involvement

Has the public been actively involved in the plan's implementation? How can public participation improve?

Have there been any ongoing public outreach activities for the plan?

Is there anything else you would like to consider?

RISK ASSESSMENT

Hazard History

Have there been any recent disaster events? If so, how did they affect your community?

Should the list of hazards addressed in the plan be updated? If so, which hazards should be added or removed?

Have there been any new issues with hazards in a certain area of your community?

Is there anything else you would like to consider?

New Data

Are any new data sources available (e.g., studies, reports, maps, etc.)?

Do any new critical facilities or infrastructure need to be added to the asset lists?

Have any changes in development trends occurred that could create additional risks?

Does any new development *reduce* risk?

Is there anything else you would like to consider?

MITIGATION STRATEGY

Capabilities

Have jurisdictions adopted new policies, plans, regulations, or reports that could support the plan?

Are there different or new education and outreach programs and resources available for mitigation activities?

Has NFIP participation changed in the participating jurisdictions?

Is there anything else you would like to consider?

Actions

Is the mitigation strategy being carried out as expected? Were the cost and timeline estimates accurate?

Are there new projects to consider?

Should existing mitigation actions be revised or removed from the plan?

Are there new funding sources to consider?

Have parts of the plan been worked into other planning mechanisms?

What challenges were there, and how can those be overcome over time?

Is there anything else you would like to consider?

Plan Adoption

Sample Adoption Resolution

(LOCAL GOVERNMENT, INCLUDING SPECIAL DISTRICTS), (STATE)

RESOLUTION NO.

A RESOLUTION OF (LOCAL GOVERNMENT) ADOPTING THE (TITLE AND DATE OF MITIGATION PLAN).

WHEREAS the (local governing body) recognizes the threat that natural hazards pose to people and property within (local government); and

WHEREAS the (local government) has prepared a multi-hazard mitigation plan, hereby known as (title and date of mitigation plan) in accordance with federal laws, including the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended; the National Flood Insurance Act of 1968, as amended; and the National Dam Safety Program Act, as amended; and

WHEREAS (title and date of mitigation plan) identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in (local government) from the impacts of future hazards and disasters; and

WHEREAS adoption by the (local governing body) demonstrates its commitment to hazard mitigation and achieving the goals outlined in the (title and date of mitigation plan).

NOW THEREFORE, BE IT RESOLVED BY THE (LOCAL GOVERNMENT), (STATE), THAT:

Section 1. In accordance with (local rule for adopting resolutions), the (local governing body) adopts the (title and date of mitigation plan). While content related to (local government) may require revisions to meet the plan approval requirements, changes occurring after adoption will not require (local government) to re-adopt any further iterations of the plan. Subsequent plan updates following the approval period for this plan will require separate adoption resolutions.

ADOPTED by a vote of ____ in favor and ____ against, and ____ abstaining, this _____ day of _____, _____.

By: _____ (print name)

ATTEST: By: _____ (print name)

APPROVED AS TO FORM: By: _____ (print name)

Annex C. Local Mitigation Plan Review Tool

Cover Page

The Local Mitigation Plan Review Tool (PRT) demonstrates how the local mitigation plan meets the regulation in 44 CFR § 201.6 and offers states and FEMA Mitigation Planners an opportunity to provide feedback to the local governments, including special districts.

1. The Multi-Jurisdictional Summary Sheet is a worksheet that is used to document how each jurisdiction met the requirements of the plan elements (Planning Process; Risk Assessment; Mitigation Strategy; Plan Maintenance; Plan Update; and Plan Adoption).
2. The Plan Review Checklist summarizes FEMA's evaluation of whether the plan has addressed all requirements.

For greater clarification of the elements in the Plan Review Checklist, please see Section 4 of the 2022 Local Mitigation Planning Policy Guide. Definitions of the terms and phrases used in the PRT can be found in Appendix E of the guide.

Plan Information	
Jurisdiction(s)	
Title of Plan	
New Plan or Update	
Single- or Multi-Jurisdiction	
Date of Plan	
Local Point of Contact	
Title	
Agency	
Address	
Phone Number	
Email	

Additional Point of Contact	
Title	
Agency	
Address	
Phone Number	
Email	

Review Information	
State Review	
State Reviewer(s) and Title	
State Review Date	
FEMA Review	
FEMA Reviewer(s) and Title	
Date Received in FEMA Region	
Plan Not Approved	
Plan Approvable Pending Adoption	
Plan Approved	

Multi-Jurisdictional Summary Sheet

In the boxes for each element, mark if the element is met (Y) or not met (N).

#	Jurisdiction Name	A. Planning Process	B. Risk Assessment	C. Mitigation Strategy	D. Plan Maintenance	E. Plan Update	F. Plan Adoption	G. HHPD Requirements	H. State Requirements
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									

Plan Review Checklist

The Plan Review Checklist is completed by FEMA. States and local governments are encouraged, but not required, to use the PRT as a checklist to ensure all requirements have been met prior to submitting the plan for review and approval. The purpose of the checklist is to identify the location of relevant or applicable content in the plan by element/sub-element and to determine if each requirement has been "met" or "not met." FEMA completes the "required revisions" summary at the bottom of each element to clearly explain the revisions that are required for plan approval. Required revisions must be explained for each plan sub-element that is "not met." Sub-elements in each summary should be referenced using the appropriate numbers (A1, B3, etc.), where applicable. Requirements for each element and sub-element are described in detail in Section 4: Local Plan Requirements of this guide.

Plan updates must include information from the current planning process.

If some elements of the plan do not require an update, due to minimal or no changes between updates, the plan must document the reasons for that.

Multi-jurisdictional elements must cover information unique to all participating jurisdictions.

Element A: Planning Process

Element A Requirements	Location in Plan (section and/or page number)	Met / Not Met
A1. Does the plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? (Requirement 44 CFR § 201.6(c)(1))		
A1-a. Does the plan document how the plan was prepared, including the schedule or time frame and activities that made up the plan's development, as well as who was involved?		
A1-b. Does the plan list the jurisdiction(s) participating in the plan that seek approval, and describe how they participated in the planning process?		
A2. Does the plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development as well as businesses, academia, and other private and non-profit interests to be involved in the planning process? (Requirement 44 CFR § 201.6(b)(2))		
A2-a. Does the plan identify all stakeholders involved or given an opportunity to be involved in the planning process, and how each stakeholder was presented with this opportunity?		

Element A Requirements	Location in Plan (section and/or page number)	Met / Not Met
A3. Does the plan document how the public was involved in the planning process during the drafting stage and prior to plan approval? (Requirement 44 CFR § 201.6(b)(1))		
A3-a. Does the plan document how the public was given the opportunity to be involved in the planning process and how their feedback was included in the plan?		
A4. Does the plan describe the review and incorporation of existing plans, studies, reports, and technical information? (Requirement 44 CFR § 201.6(b)(3))		
A4-a. Does the plan document what existing plans, studies, reports and technical information were reviewed for the development of the plan, as well as how they were incorporated into the document?		
ELEMENT A REQUIRED REVISIONS		
Required Revision**:**		

Element B: Risk Assessment

Element B Requirements	Location in Plan (section and/or page number)	Met / Not Met
B1. Does the plan include a description of the type, location, and extent of all natural hazards that can affect the jurisdiction? Does the plan also include information on previous occurrences of hazard events and on the probability of future hazard events? (Requirement 44 CFR § 201.6(c)(2)(i))		
B1-a. Does the plan describe all natural hazards that can affect the jurisdiction(s) in the planning area, and does it provide the rationale if omitting any natural hazards that are commonly recognized to affect the jurisdiction(s) in the planning area?		
B1-b. Does the plan include information on the location of each identified hazard?		
B1-c. Does the plan describe the extent for each identified hazard?		
B1-d. Does the plan include the history of previous hazard events for each identified hazard?		

Element B Requirements	Location in Plan (section and/or page number)	Met / Not Met
B1-e. Does the plan include the probability of future events for each identified hazard? Does the plan describe the effects of future conditions, including climate change (e.g., long-term weather patterns, average temperature and sea levels), on the type, location and range of anticipated intensities of identified hazards?		
B1-f. For participating jurisdictions in a multi-jurisdictional plan, does the plan describe any hazards that are unique to and/or vary from those affecting the overall planning area?		
B2. Does the plan include a summary of the jurisdiction's vulnerability and the impacts on the community from the identified hazards? Does this summary also address NFIP-insured structures that have been repetitively damaged by floods? (Requirement 44 CFR § 201.6(c)(2)(ii))		
B2-a. Does the plan provide an overall summary of each jurisdiction's vulnerability to the identified hazards?		
B2-b. For each participating jurisdiction, does the plan describe the potential impacts of each of the identified hazards on each participating jurisdiction?		
B2-c. Does the plan address NFIP-insured structures within each jurisdiction that have been repetitively damaged by floods?		

ELEMENT B REQUIRED REVISIONS
Required Revision**:**

Element C: Mitigation Strategy

Element C Requirements	Location in Plan (section and/or page number)	Met / Not Met
C1. Does the plan document each participant's existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs? (Requirement 44 CFR § 201.6(c)(3))		
C1-a. Does the plan describe how the existing capabilities of each participant are available to support the mitigation strategy? Does this include a discussion of the existing building codes and land use and development ordinances or regulations?		
C1-b. Does the plan describe each participant's ability to expand and improve the identified capabilities to achieve mitigation?		
C2. Does the plan address each jurisdiction's participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement 44 CFR § 201.6(c)(3)(ii))		
C2-a. Does the plan contain a narrative description or a table/list of their participation activities?		
C3. Does the plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? (Requirement 44 CFR § 201.6(c)(3)(i))		
C3-a. Does the plan include goals to reduce the risk from the hazards identified in the plan?		
C4. Does the plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure? (Requirement 44 CFR § 201.6(c)(3)(ii))		
C4-a. Does the plan include an analysis of a comprehensive range of actions/projects that each jurisdiction considered to reduce the impacts of hazards identified in the risk assessment?		
C4-b. Does the plan include one or more action(s) per jurisdiction for each of the hazards as identified within the plan's risk assessment?		

Element C Requirements	Location in Plan (section and/or page number)	Met / Not Met
C5. Does the plan contain an action plan that describes how the actions identified will be prioritized (including a cost-benefit review), implemented, and administered by each jurisdiction? (Requirement 44 CFR § 201.6(c)(3)(iv)); (Requirement §201.6(c)(3)(iii))		
C5-a. Does the plan describe the criteria used for prioritizing actions?		
C5-b. Does the plan provide the position, office, department or agency responsible for implementing/administrating the identified mitigation actions, as well as potential funding sources and expected time frame?		
ELEMENT C REQUIRED REVISIONS		
Required Revision**:**		

Element D: Plan Maintenance

Element D Requirements	Location in Plan (section and/or page number)	Met / Not Met
D1. Is there discussion of how each community will continue public participation in the plan maintenance process? (Requirement 44 CFR § 201.6(c)(4)(iii))		
D1-a. Does the plan describe how communities will continue to seek future public participation after the plan has been approved?		
D2. Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a five-year cycle)? (Requirement 44 CFR § 201.6(c)(4)(i))		
D2-a. Does the plan describe the process that will be followed to track the progress/status of the mitigation actions identified within the Mitigation Strategy, along with when this process will occur and who will be responsible for the process?		
D2-b. Does the plan describe the process that will be followed to evaluate the plan for effectiveness? This process must identify the criteria that will be used to evaluate the information in the plan, along with when this process will occur and who will be responsible.		

Element D Requirements	Location in Plan (section and/or page number)	Met / Not Met
D2-c. Does the plan describe the process that will be followed to update the plan, along with when this process will occur and who will be responsible for the process?		
D3. Does the plan describe a process by which each community will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? (Requirement 44 CFR § 201.6(c)(4)(ii))		
D3-a. Does the plan describe the process the community will follow to integrate the ideas, information and strategy of the mitigation plan into other planning mechanisms?		
D3-b. Does the plan identify the planning mechanisms for each plan participant into which the ideas, information and strategy from the mitigation plan may be integrated?		
D3-c. For multi-jurisdictional plans, does the plan describe each participant's individual process for integrating information from the mitigation strategy into their identified planning mechanisms?		
ELEMENT D REQUIRED REVISIONS		
Required Revision**:**		

Element E: Plan Update

Element E Requirements	Location in Plan (section and/or page number)	Met / Not Met
E1. Was the plan revised to reflect changes in development? (Requirement 44 CFR § 201.6(d)(3))		
E1-a. Does the plan describe the changes in development that have occurred in hazard-prone areas that have increased or decreased each community's vulnerability since the previous plan was approved?		
E2. Was the plan revised to reflect changes in priorities and progress in local mitigation efforts? (Requirement 44 CFR § 201.6(d)(3))		
E2-a. Does the plan describe how it was revised due to changes in community priorities?		

Element E Requirements	Location in Plan (section and/or page number)	Met / Not Met
E2-b. Does the plan include a status update for all mitigation actions identified in the previous mitigation plan?		
E2-c. Does the plan describe how jurisdictions integrated the mitigation plan, when appropriate, into other planning mechanisms?		
ELEMENT E REQUIRED REVISIONS		
Required Revision:		

Element F: Plan Adoption

Element F Requirements	Location in Plan (section and/or page number)	Met / Not Met
F1. For single-jurisdictional plans, has the governing body of the jurisdiction formally adopted the plan to be eligible for certain FEMA assistance? (Requirement 44 CFR § 201.6(c)(5))		
F1-a. Does the participant include documentation of adoption?		
F2. For multi-jurisdictional plans, has the governing body of each jurisdiction officially adopted the plan to be eligible for certain FEMA assistance? (Requirement 44 CFR § 201.6(c)(5))		
F2-a. Did each participant adopt the plan and provide documentation of that adoption?		
ELEMENT F REQUIRED REVISIONS		
Required Revision:		

Element G: High Hazard Potential Dams (Optional)

HHPD Requirements	Location in Plan (section and/or page number)	Met / Not Met
HHPD1. Did the plan describe the incorporation of existing plans, studies, reports and technical information for HHPDs?		
HHPD1-a. Does the plan describe how the local government worked with local dam owners and/or the state dam safety agency?		
HHPD1-b. Does the plan incorporate information shared by the state and/or local dam owners?		
HHPD2. Did the plan address HHPDs in the risk assessment?		
HHPD2-a. Does the plan describe the risks and vulnerabilities to and from HHPDs?		
HHPD2-b. Does the plan document the limitations and describe how to address deficiencies?		
HHPD3. Did the plan include mitigation goals to reduce long-term vulnerabilities from HHPDs?		
HHPD3-a. Does the plan address how to reduce vulnerabilities to and from HHPDs as part of its own goals or with other long-term strategies?		
HHPD3-b. Does the plan link proposed actions to reducing long-term vulnerabilities that are consistent with its goals?		
HHPD4. Did the plan include actions that address HHPDs and prioritize mitigation actions to reduce vulnerabilities from HHPDs?		
HHPD4-a. Does the plan describe specific actions to address HHPDs?		
HHPD4-b. Does the plan describe the criteria used to prioritize actions related to HHPDs?		
HHPD4-c. Does the plan identify the position, office, department or agency responsible for implementing and administering the action to mitigate hazards to or from HHPDs?		
HHPD Required Revisions		
Required Revision**:**		

Element H: Additional State Requirements (Optional)

Element H Requirements	Location in Plan (section and/or page number)	Met / Not Met
This space is for the State to include additional requirements.		

Plan Assessment

These comments can be used to help guide your annual/regularly scheduled updates and the next plan update.

Element A. Planning Process

Strengths

-

Opportunities for Improvement

-

Element B. Risk Assessment

Strengths

-

Opportunities for Improvement

-

Element C. Mitigation Strategy

Strengths

-

Opportunities for Improvement

-

Element D. Plan Maintenance

Strengths

-

Opportunities for Improvement

-

Element E. Plan Update

Strengths

-

Opportunities for Improvement

-

Element G. HHPD Requirements (Optional)

Strengths

-

Opportunities for Improvement

-

Element H. Additional State Requirements (Optional)

Strengths

-

Opportunities for Improvement

-