Guidance for Flood Risk Analysis and Mapping

Incorporating Mitigation Planning Technical Assistance into Risk MAP Projects

November 2023

FEMA

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Requirements for the FEMA Risk Mapping, Assessment, and Planning (Risk MAP) Program are specified separately by statute, regulation, or FEMA policy (primarily the Standards for Flood Risk Analysis and Mapping). This guidance document supports successful integration of Risk MAP products with mitigation and community planning through technical assistance activities.

For more information on mitigation planning policies, products and training, please visit the FEMA mitigation planning webpage (https://www.fema.gov/emergency-managers/risk-management/hazard-mitigation-planning).

For more information on flood mapping guidance, please visit the FEMA Guidelines and Standards for Flood Risk Analysis and Mapping webpage (https://www.fema.gov/guidelines-and-standards-flood-risk-analysis-and-mapping). Copies of the Standards for Flood Risk Analysis and Mapping policy, related guidance, technical references, and information about the guidelines and standards development process are all available here. You can also search directly by document title at https://www.fema.gov/resource-document-library.

The Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), as amended by the Disaster Mitigation Act of 2000, gives the legal basis for state, tribal and local governments to undertake risk-based approaches to reducing natural hazard risks through mitigation planning. The Stafford Act requires state, tribal and local governments to develop and adopt approved hazard mitigation plans as a condition for receiving certain types of non-emergency disaster assistance. Over the years, additional legislation has passed that requires an approved mitigation plan as a condition for receiving non-emergency disaster assistance from new grant programs. More information on which FEMA assistance programs require a mitigation plan can be found at the Mitigation Planning and Grants webpage.

Title 44, Chapter 1, Code of Federal Regulations (CFR) contains requirements and information for carrying out the hazard mitigation planning provisions. The program has also issued policies to help develop and update mitigation plans. They are:

- State Mitigation Planning Policy Guide (FP 302-094-2, April 19, 2022)
- Local Mitigation Planning Policy Guide (FP-206-21-0002, April 19, 2022)
- Guía de políticas de planificación de mitigación a nivel local (FP-206-21-0002, 19 de abril de 2022)
- Tribal Mitigation Plan Review Guide (FP 306-112-1, December 5, 2017)

More information on hazard mitigation planning regulations, policies, products and training is on the FEMA Hazard Mitigation Planning webpage. Some examples include:

- State Mitigation Planning Key Topics Bulletins (2016): Planning Process, Risk Assessment, Mitigation Capabilities and Mitigation Strategy.
- Local Mitigation Planning Handbook (2023)
- Tribal Mitigation Planning Handbook (2019)

Table of Revisions

Affected Section or Subsection	Date	Description
First Publication	February 2018	Initial version of new transformed guidance. The content was derived in part by Operating Guidance 01-11, Risk MAP Guidance for Incorporating Mitigation Planning Technical Assistance and Training into Flood Risk Projects. It has been reorganized and is being republished.
Sections 1 – 3, Appendix	November 2023	Updated to incorporate new best practices and case studies, improve usability, and correct broken URLs/links.

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1. Introduction

1.1. What is Mitigation Planning Technical Assistance?

Mitigation Planning Technical Assistance (MPTA) is a way for FEMA regions and mapping partners to support communities as they advance hazard mitigation and community resilience. It includes a broad range of possible tasks. FEMA regional offices typically identify communities in need of technical assistance. These are often communities in the Risk MAP process, but MPTA is not limited to Risk MAP communities.

MPTA can bridge the gap between risk information and mitigation action. As shown in Figure 1, support is wide-ranging. It can include risk data enhancement, identifying mitigation projects, training, communication and outreach, revising building codes and other projects related to analyzing and managing the hazard risk.

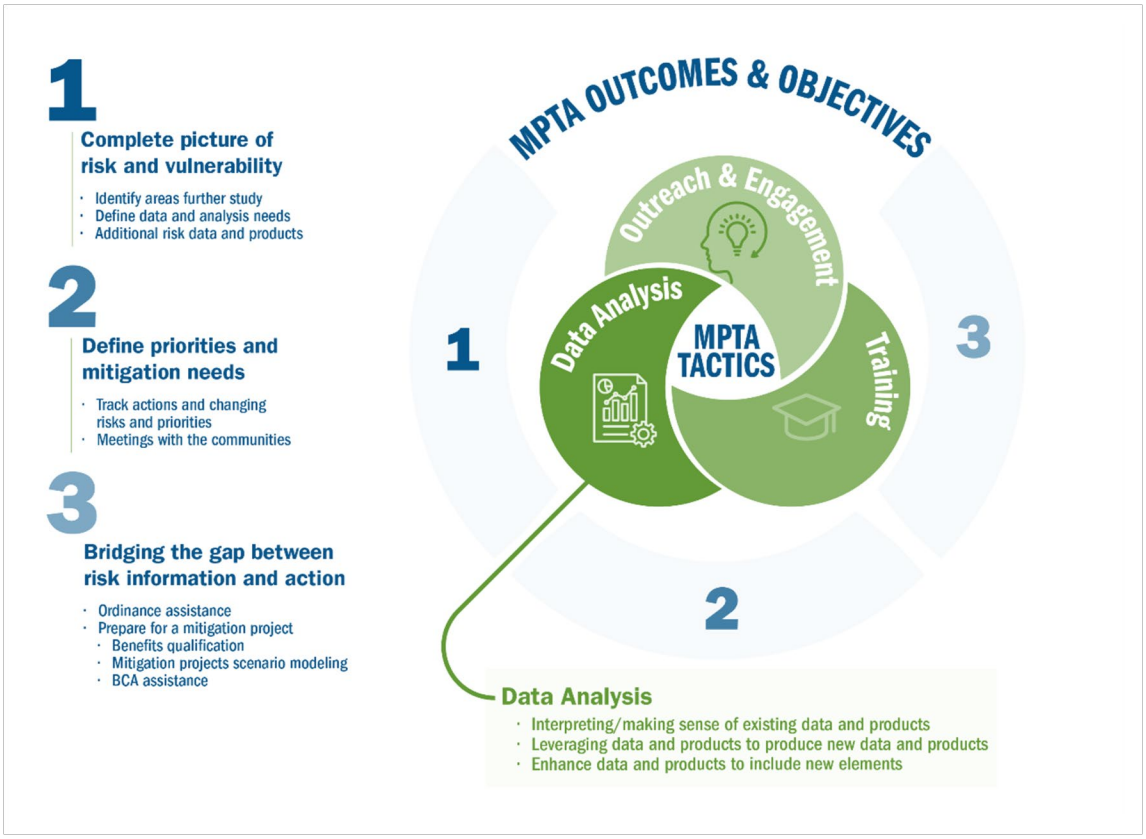

Figure 1. MPTA Outcomes and Objectives

FEMA envisions MPTA as a component of every flood risk project. The region, Cooperating Technical Partner (CTP) or other mapping partner will work to align this technical assistance with other Risk MAP program goals and measures.

1.2. How to Use This Guidance

This guidance describes how Risk MAP Project Teams can further support FEMA's goals for the Risk MAP program by providing MPTA, both during the Risk MAP flood risk project life cycle and to communities that are not in the Risk MAP process. The guidance in this document is consistent with the Risk MAP program vision.

The main audiences for this guidance document are staff from the 10 FEMA regional offices, CTPs, and the Project Teams that carry out Risk MAP projects in each region. In addition to the FEMA Project Officer, Project Teams should include:

- CTP and/or Risk MAP providers who are participating in the project.
- State or Tribal National Flood Insurance Program (NFIP) Coordinator.
- State or Tribal Hazard Mitigation Officer.
- State or Tribal Mitigation Planner (where applicable).
- Representatives of other federal agencies and entities, such as regional planning agencies and water management districts.

The Risk MAP program merges flood hazard mapping, risk assessment tools, and mitigation planning into one seamless program. Risk MAP aims to increase risk understanding and enable action that reduces risk to life and property. Technical assistance can bridge the gap between risk information and mitigation action. Every Risk MAP flood risk project should offer technical assistance. By helping stakeholders understand Risk MAP information and tools, the products become more useful and usable. Technical assistance can also bring about more robust mitigation and outreach strategies tailored to a state and community's risks and needs.

> *"Technical assistance to support bridging the gap between risk information and mitigation action plays a key role in the Risk MAP program vision. It should be offered as part of every Risk MAP Flood Risk Project."*

This guidance focuses on leveraging Risk MAP Project Teams to provide technical assistance to a state, local, territorial and/or tribal (SLTT) jurisdictions. The guidance has five sections:

- Section 1 provides an overview of MPTA. It includes FEMA's Risk MAP life cycle and a state and community's planning cycles intersect.
- Section 2 gives information for selecting appropriate technical assistance activities.
- Section 3 lists potential outcomes of MPTA.
- Section 4 presents an overview of MPTA activities that can be added into Risk MAP flood risk projects (the full menu is in Appendix A of this document).

- Section 5 explains how to request MPTA.

1.3. Making the Case for Technical Assistance

1.3.1. USE OF RISK INFORMATION FOR ACTION

Risk MAP products can be complex. Recipients may find them hard to use and miss their connection to advancing community resilience. Technical assistance can build trust with communities by breaking down these barriers to use, and tailoring products to reach the SLTT's desired outcomes.

MPTA can show SLTTs how to use Risk MAP products to address problems through planning, outreach or other types of assistance. MPTA can also interpret or analyze data to make it more useful to SLTTs. There is no cost share requirement for SLTTs to participate in MPTA. The goal is for the program to be accessible for all communities.

CASE STUDY: One FEMA Region uses MPTA with the name Real Time Technical Assistance (RTTA). RTTA projects are intended to be flexible, small-scale projects that build upon current flood studies and can be used to raise community awareness of flood risk and identify or advance potential mitigation actions. RTTA has led to the development of HMA projects for a number of jurisdictions, especially for smaller rural communities who do not have the capacity or budget to hire an engineering firm. It has also led to additional technical assistance under Building Resilient Infrastructure and Communities (BRIC) Direct Technical Assistance (DTA). Through RTTA, MPTA has opened doors to a broader relationship between regions, CTPs and SLTTs. That in turn has led to increased resilience in participating states.

1.3.2. BUILDING CAPACITY FOR UNDERSERVED OR SOCIALLY VULNERABLE COMMUNITIES

Risk information alone is often not enough to support or lead to mitigation actions. Lack of staff capacity or technical skills, insufficiently tailored risk information, or varying community interests and needs all lead to inaction. Further, the process of understanding and mitigating disaster risk can be complex. Stakeholders may not have worked together or may not have been fully identified for a project or program. Technical information may be hard to find or understand. The answers to even basic questions may take time to find. These delays put a project or program's momentum at risk.

The items called out above are challenging for experienced, highly resourced communities. They are even more so for communities with less resources. Delivering technical assistance that meets a broad range of needs and approaches can build trust with underserved and disadvantaged communities. Because communities have unique challenges, there is no one-size-fits-all solution.

MPTA recognizes these challenges by identifying a community's needs and then tailoring assistance. Learning about each community first supports a more equitable distribution of the Risk MAP benefits. We can then give specific technical support to fill those gaps.

The terms “underserved” and “disadvantaged community” may mean a community’s government lacks the resources to provide a full range of services to its residents. These communities may not be able to develop, fund and implement a mitigation project. The terms may also apply to groups of people who share certain characteristics, whether the local government is well-resourced or not. Underserved and disadvantaged groups within a community may share some of the following factors:

- Socioeconomic status
- Household composition
- Access and functional needs
- Race
- Ethnicity
- Language
- Immigration status
- Access to housing and transportation

Any one or a combination of these factors can be a barrier to standard outreach practices. They limit a community’s ability to reduce risk or recover from a natural hazard event.

Tools are available to help learn which communities are underserved. These include the Council on Environmental Climate and Economic Justice Screening Tool (CEJST) or the FEMA Community Resilience Challenges Index (FEMA CRCI). The Community Disaster Resilience Zone (CDRZ) designations identify census tracts which are most at risk from the effects of natural hazards and climate change, and therefore deserve priority for technical assistance.

The next steps involve working alongside communities to understand the specific challenges, tailor solutions to needs, and to plan technical assistance accordingly. Removing barriers and making resources more widely available will advance inclusive community engagement practices that lead to equitable outcomes.

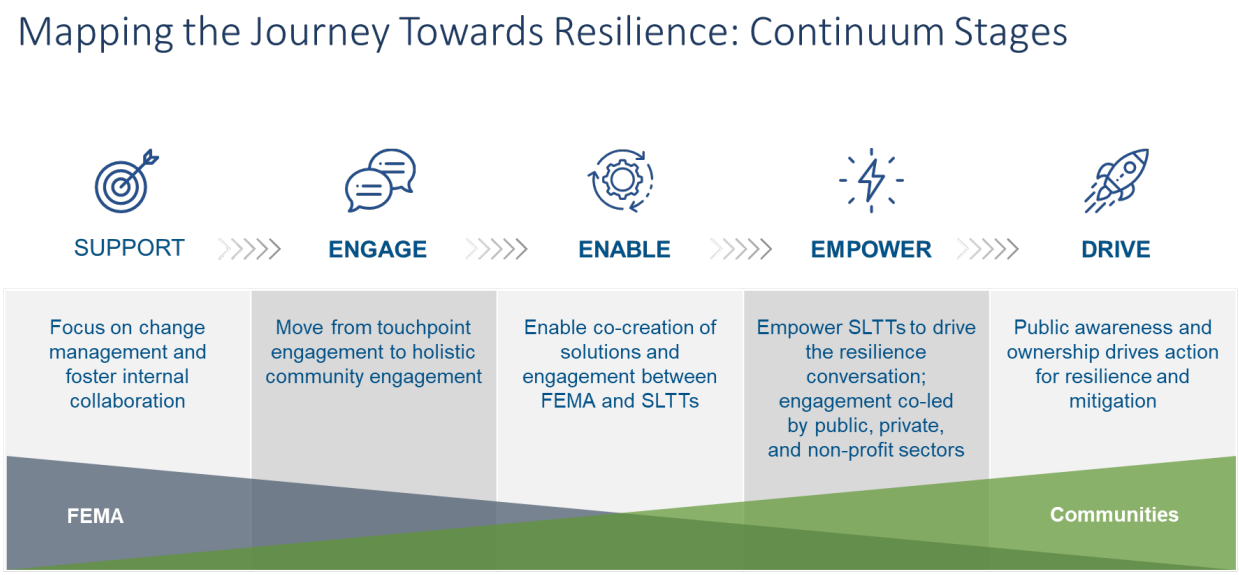

Figure 2. Resilience Continuum

Tools to assess community capacity are also available, such as the Resilience Continuum. The continuum is a progressive set of steps guiding FEMA Risk MAP practitioners' (including CTPs and PTS) efforts toward building a community's ownership of their resilience future.

Disaster resilience is complex and interconnected. It is dependent on a wide range of factors. While FEMA may not be able to support all of those factors, technical assistance can often make a difference in whether efforts to become more resilient is realized or not. The continuum can help understand current capacity. It can also suggest goals for owning mitigation processes.

FEMA's goals for technical assistance are, first, to assist SLTTs to understand their risk so they can identify and carry out risk reduction measures. Second, FEMA wants to equip and empower SLTTs to take additional measures after technical assistance is complete.

As such, FEMA's primary objective is to focus efforts on supporting a community to take ownership of their disaster resilience by helping them:

- Become more fully aware of present and future risks.
- Complete a picture of risk and vulnerability.
- Understand community-specific, effective risk-reduction strategies.
- Develop capacity and take steps to implement their strategies.

1.3.3. BETTER TRACKING OF OUTCOMES

Technical assistance helps support the "P" in Risk MAP, which stands for planning, particularly mitigation planning. Planning can include using Risk MAP products to assess risk, and then identifying actions to reduce that risk. It could also mean more effective mitigation actions using Risk MAP data and products in those planning efforts.

Technical assistance can also be a way to assess whether Risk MAP outreach, products and other program elements are supporting mitigation. Technical assistance can continue to engage with SLTTs after the Risk MAP products and data are produced. In a more standard Risk MAP process, the outcomes of the project can be hard to identify.

While technical assistance can be provided without officially calling it Technical Assistance, using this term can be a way to track impacts of the Risk MAP program more strategically.

1.4. Types of Technical Assistance

MPTA should focus on building SLTT capacity to analyze available data, incorporate risk assessment into the planning process and take actions to reduce risk and vulnerabilities. The mitigation plan intersects with technical assistance in two ways. First, it helps provide a framework for identifying technical assistance actions. Second, MPTA products and tools can be used in every phase of the mitigation planning process. Reducing natural hazard risks requires extensive coordination among the many SLTT staff with mission areas in planning and community development as well as emergency response. To this end, Section 2 addresses both the content of mitigation planning technical assistance and the importance of working closely with stakeholders.

The guidance, context and other information in this document are not mandatory unless they are codified separately in a statute, regulation or policy. Alternate approaches are acceptable if they comply with all requirements. Regions and mapping partners should work with SLTTs to find innovative ways to use MPTA.

MPTA provides a broad range of technical assistance, but providers are limited in what they can do in a technical assistance project. Providers should think creatively and consult with FEMA regional staff about what support is possible.

MPTA assistance generally falls into the following categories, that cover many types of assistance (e.g. under Mitigation Planning Support, MPTA could include analysis of Risk Map products to enhance the risk assessment):

- Training and capacity building.
- Outreach and strategic communication support.
- Mitigation project support.
- Mitigation planning support.
- Risk products.
- Datasets.
- Additional support provided during the Risk MAP life cycle.

CASE STUDY: A tribe noticed that important wildlife habitats were repetitively flooded. This caused economic and cultural losses. To better understand the areas of greatest flood risk, the tribe mapped the wildlife habitats. Then, the tribe overlaid that information with National Flood

Hazard Layer (NFHL) shapefiles to show the areas of greatest risk. This analysis allowed the tribe to develop a specific mitigation action to address flooding. They received a grant to implement nature-based solutions and green infrastructure to reduce adverse impacts of flooding.

See Appendix A for examples of each of these categories.

2. Selecting Activities

MPTA can be provided informally through interactions among the Project Team, SLTT staff and planning teams. These are usually stand-alone efforts based on relative risk and stakeholder contributions, at the discretion of the FEMA Regions. It is important to note that stand-alone efforts may be ordered even when flood mapping and/or creation of Risk MAP Flood Risk Products may not be part of the Risk MAP project for a community. Specific activities will vary and may be limited by the availability of funding. Innovative and new activities may be considered. The Regional Mitigation Planning staff and project engineers have the resources and experience to help identify and scope out the different types of technical assistance activities. The state or tribal Hazard Mitigation Coordinator and NFIP Coordinator should be consulted when selecting technical assistance activities.

Figure 3. Technical Assistance Selection Process

2.1. Determining Need

For flood mapping-related projects, the most appropriate time to determine community needs is during the Discovery phase. Needs are based on expressed interests, in-house capabilities and other factors and timelines. Project Teams can tailor mitigation planning technical assistance to the identified needs. However, needs for technical assistance evolve and arise at each stage along the Risk MAP process. While more challenging from a contracting and funding perspective, newly identified or changes to technical assistance activities after the Discovery phase can still lead to technical assistance activities.

Project Teams should use the Discovery process to gather input on concerns and capabilities. Customer-centric approaches and opportunities to advance equitable outcomes should be top of mind during Discovery. Participation activities during Discovery can gather information from

stakeholders. These include questionnaires, mapping exercises and roundtable discussions. For example, questionnaires can ask for information on local databases, staff and mitigation successes to provide insights into local capacity. SLTTs with greater capacity-building needs can be given priority for technical assistance to help fill any gaps identified.

CASE STUDY: Because a community may not know what is needed during Discovery, the Project Team may have to tailor technical assistance in different phases of the project cycle. This is often during the Data Development phase. One state uses MPTA through a program they call Resilience on Command (ROC). Modeling engineers develop ROC projects when they find areas where mitigation potential exists. They then provide "what if" scenario information. The information shows how an action could mitigate a particular area, such as upsizing a culvert that impedes the flow of water and causes flooding. These projects give communities information on what impacts they can expect from the mitigation measure, a rough estimate of cost, and possible grant sources for funding. These ROC projects follow the Flood Study Review meetings during the Data Development portion of a Risk MAP project.

Another challenge could be a Risk MAP project that includes jurisdictions in two counties. One may have updated and adopted its hazard mitigation plan in the past year, while the other is just beginning to update its hazard mitigation plan. While jurisdictions in the first county would benefit more from technical assistance activities that support plan implementation and maintenance, jurisdictions in the second county would benefit more from activities that address risk assessment and developing mitigation actions. Project Teams can access information on mitigation plan status through the resources below:

- FEMA Hazard Mitigation Plan Status webpage (https://www.fema.gov/emergency-managers/risk-management/hazard-mitigation-planning/status) or link to the FEMA Hazard Mitigation Plan Status FEMA Hazard Mitigation Plan Status GIS Service.
- Open FEMA Hazard Mitigation Plan Statuses dataset.
- Plan status is also available from the Mitigation Planning Portal (https://hazards.fema.gov/mitigation/loginhttps://hazards.fema.gov/mitigation/login, with a password). This portal gives plan status, jurisdictional adoption, and expiration dates.

Project Teams can also provide technical assistance through informal interactions with state/tribal hazard mitigation officers or planners and local planning teams. Project Teams should adopt a customer-centric approach throughout the Risk MAP life cycle. They should emphasize their interest in solving community challenges. This approach will reveal additional opportunities to assist communities. MPTA should not be limited to preparing or updating a plan. Rather, technical assistance should focus on building capabilities to analyze available data, using available tools, and develop actions to reduce risk. Informal MPTA activities are tailored to specify needs but are planned for by the program without calling it MPTA. As noted in the Benefits section, identifying the assistance as MPTA can lead to better tracking of how these activities meet community needs.

2.2. Preparing for Technical Assistance and Identifying the Budget

Project Teams can provide technical assistance both informally, through a customer-centric approach to project delivery, and formally, through stand-alone efforts. In ordering stand-alone efforts, regions must understand the budget for each project's five-year mapping plan.

Risk MAP projects are prioritized on a watershed basis by evaluating several factors, including risk, need, and the availability of data. Every watershed across the nation is ranked based on these factors. FEMA regional offices use this information and coordinate with states to help select potential projects. Selected projects will include the full suite of Risk MAP Products and services, including flood mapping, risk assessment and mitigation planning activities.

CTPs and other mapping partners should consider and incorporate mitigation planning technical assistance efforts into the Risk MAP Business Plan each year. This is needed to secure funding. The CTP Program provides funding to complete eligible community outreach and mitigation tasks, including MPTA. CTPs should work with their FEMA region to understand their priorities and timelines in funding this work through the CTP Program.

The annual Notice of Funding Opportunity (NOFO) provides details on the available grants as well as eligibility requirements for CTPs. The NOFO is posted to Grants.gov each spring. For more information on funding for CTPs, visit How to Become a Cooperating Technical Partner.

2.3. Coordinating Timelines

Beginning with the Risk MAP Discovery process, Project Teams should coordinate MPTA with ongoing efforts in the study area. One way of coordinating timelines is to align Risk MAP meetings and touchpoints with the mitigation planning update and/or public involvement process. For example, the Project Team can schedule Risk MAP meetings to coincide with the hazard mitigation plan meeting schedule to encourage better attendance and participation by all stakeholders in both processes. This also encourages the hazard mitigation planning team to contribute their unique knowledge of community planning, economic development, capabilities and hazards to the Risk MAP process. Additionally, if an SLTT maintains a website that is viewed regularly, the Project Team can work with the community to post information about Risk MAP meetings, information requests and project status.

2.4. Addressing Federal and SLTT Priorities

After the budget and timelines are identified, state mapping partners and FEMA regions select the most appropriate MPTA activities. MPTA includes a broad range of activities. Innovative or new activities that help bridge the gap between risk information and mitigation action may also be considered. Technical assistance should focus on building local capabilities to plan for and reduce local hazard risks. Guidelines for valid MPTA activities include:

1. The activities tie directly to and support Risk MAP, especially the call to take action that reduces risk to life and property.
2. The activities do not duplicate federal assistance that communities have already been awarded, such as a FEMA Hazard Mitigation Assistance (HMA) planning grant. MPTA may supplement, but should not duplicate, other federal assistance. The Regional HMA Branch can provide mitigation grant status.
3. The activities do not establish official FEMA guidance.
4. The activities do not involve writing the plan for the community.

Finding the most appropriate technical assistance activities requires consultation with the state NFIP Coordinators, state or tribal mitigation officers and mitigation planners. These people work closely with communities and generally have an excellent sense of community need, and state or tribal priorities. For example, state hazard mitigation program staff track local hazard mitigation plan status and updates. They also tend to have a broad perspective on mitigation needs and opportunities based on their knowledge of active mitigation projects in the state's diverse communities. State floodplain management staff should also be consulted. They tend to have a full understanding of local floodplain mapping needs and challenges and state priorities. Active consultation with state stakeholders can also help obtain community buy-in.

CASE STUDY: The community in this example was the epicenter of major flooding in the past. The county Department of Transportation (DOT), which oversees the transportation network and floodplain management program, had a progressive flood mitigation program but was looking for ways to advance its program. The county sought technical assistance on additional best practices or new approaches to advance its program. Assistance involved determining the benefits and costs of specific resiliency actions. This information was then used to advise how the county DOT could effectively increase resilience. The project team used an agent-based and future flood scenario-driven resilience decision support tool to see the impact of disasters over time. Using this tool, the community's critical and most at-risk infrastructure was identified and evaluated to improve resiliency. The county identified the top 10 "disrupters" in the transportation network. Using the metrics provided in the decision support tool, the county could substantiate the need to mitigate the top three disrupters. FEMA approved the subsequent grant application submitted to mitigate flooding to these bridges.

This case study is an example of how MPTA can bridge the gap between risk information and mitigation action. Using the tools at their disposal, the county DOT informed mitigation action. Technical assistance should focus on building local capabilities to plan for and reduce local hazard risks.

2.5. Question Prompts to Identify Technical Assistance Activities

The question prompts in the table below can help state mapping partners, FEMA regions, and communities identify technical assistance activities. The questions are color coded to show the Risk

MAP life cycle phase they most fit into. However, these questions may also help with communities not within the Risk MAP process. The activities listed here are examples. Project Teams should not feel limited to these options.

Phase Key
Discovery
Mapping Phase
Due Process
Flood Risk Products

QUESTION PROMPTS TO IDENTIFY TECHNICAL ASSISTANCE ACTIVITIES

Questions	*Example MPTA activities to consider*	*Suggested Phase*
IDENTIFYING COMMUNITY PRIORITIES Does the community need help identifying the outcomes or priorities the community is trying to accomplish?	**Visually communicate flood risk.** Use flood risk products to visually communicate flood risk and engage key stakeholders or the public.	● ● ● ●
	Integration planning. Conduct meetings with Mitigation and Risk MAP within a project area to refresh the community profile(s) and develop plans for advancing relationships and mitigation action.	● ● ● ●
	Outreach. Provide technical support for the development and implementation of a Communication and Outreach Strategy and/or project-specific outreach activities. Examples could include expanded kickoff meetings, stakeholder coordination, engagement or communications planning, and specialized training.	● ● ● ●
COMPLETING A PICTURE OF RISK AND VULNERABILITY Is the community uncertain about what mitigation actions would be most needed due to an incomplete picture of risk and vulnerability? • Is the flood risk or vulnerability in one area of the community particularly challenging or debated among key stakeholders?	**Area Prioritization.** Assist local officials in prioritizing areas for further study (e.g., flood risk may be poorly known in areas with dated risk assessments or areas that have experienced significant changes in land use).	● ● ● ●
	Data and Analysis Needs Assessment. Help communities use available flood risk or Discovery products, or define the data and analysis needs for risk reduction.	● ● ● ●

Questions	*Example MPTA activities to consider*	*Suggested Phase*
• Does the community know its data and analysis needs? • Does the community have several mitigation projects underway without an understanding of how they affects risk? • Does the community know how future conditions may affect potential mitigation efforts or hazard risk? Future conditions should consider how climate, land use and demographic trends may affect future risk. • Does the community know how a potential mitigation project or action might affect socially vulnerable or disadvantaged communities? • Is the community aware of other successful/ongoing projects in the region that could serve as a model?	**Risk and Priority Assessment.** Help communities develop more robust assessments of risks and priorities (e.g., identify any overlap between flood-prone areas and areas targeted for future development in the comprehensive plan, including climate and future conditions scenarios).	
	Mitigation Action Tracking and Verification. Assist local agencies and officials in tracking progress on previously identified mitigation actions and assess changing risks and priorities.	
	Equity integration. Integrate equity considerations into hazard risk and vulnerability analyses. Please identify additional equity activities throughout. All activities conducted in a socially vulnerable or disadvantaged community should build equity.	
	Future conditions integration. Integrate future conditions into hazard and vulnerability analyses. Help identify and use additional datasets that include future conditions.	
	Data Coupling. Help communities couple Risk MAP data with local datasets.	
	Mitigation Planning Analysis. Use flood risk products to inform mitigation actions. For a list of flood risk products and their uses, see the menu in Appendix A.	
INTEGRATING EQUITY Has the community identified ways to ensure that their mitigation project plans, outreach or risk product use are designed equitably? • Has the community considered differing risk levels based on social vulnerability factors? • Has the community identified equitable ways to distribute the benefits of mitigation projects across their community? • Is the community aware of the support and tools available to help incorporate equity and social vulnerability into their projects?	**Identifying and using tools,** such as the CEJST, FEMA Community Resilience Challenges Index (FEMA CRCI), FEMA Resilience Analysis and Planning Tool, and others to identify socially vulnerable communities and/or better understand their unique social contexts.	
	Project design: Work alongside communities to tailor solutions that respond to community needs via scenario modeling and benefits quantification. Emphasize socially vulnerable considerations.	
	Measuring project success equitably: Setting goals and KPIs that ensure that project benefits and outcomes are equitably distributed.	

Questions	*Example MPTA activities to consider*	*Suggested Phase*
• Has the community identified internal or external work, policies, resources or partners that can help them integrate equity into community-level work? ***NOTE: Building community capacity for lower capacity or socially vulnerable communities builds equity. As such, many other activities inherently support equity.*	**Technical trainings.** Offer existing FEMA training resources or tailored trainings to communities.	
LEVERAGING RISK MAP PRODUCTS Is the community aware of the types of Risk MAP products that are available and how to use them?	Use the **Flood Depth and Analysis Grid dataset** to integrate flood risk data with local data on structures and residents to prioritize mitigation actions based on risk.	
	Use the **Changes Since Last FIRM** dataset to inform development decisions, land use and transportation planning, evacuation plans or where flood mitigation may be needed.	
	Use the **Flood Depth and Analysis Grid** dataset to help screen for cost-effectiveness of potential mitigation projects or to integrate flood risk information into local planning and permitting decisions.	
	Use the **Flood Risk Assessment** dataset to identify areas where mitigation activities may produce the greatest return on investment, areas requiring higher building code requirements, or use of flood-resilient designs and construction. The Flood Risk Assessment should also help communities identify and plan to protect assets of historic significance, or of traditional spiritual or cultural significance.	
	Use the **Flood Risk Assessment** dataset to screen for cost-effectiveness of potential mitigation projects.	
	Use the **Areas of Mitigation Interest** dataset to prioritize mitigation actions, identify and prioritize capital improvement projects, or promote watershed-scale approaches to hazard mitigation.	

Questions	*Example MPTA activities to consider*	*Suggested Phase*
INTERPRETING RISK MAP PRODUCTS Does the community have flood risk products but are unsure how to meaningfully interpret them? • How can existing risk information help prioritize mitigation activities and better assess changing risks? • What additional risk data or product enhancement would make products more useful and usable?	**Flood Risk Product Enhancement and Interpretation.** Interpret and analyze the datasets in the Flood Risk Database.	
	Risk Assessments. Assist local officials in using the preliminary FIRM and FIS report to assess changing risks and priorities.	
	Mitigation Action Prioritization. Help local officials prioritize mitigation actions and develop targeted outreach (e.g., using Flood Depth and Analysis Grid dataset).	
BRIDGING THE GAP BETWEEN RISK INFORMATION AND MITIGATION ACTION Is there a proposed or desired mitigation effort but a lack of technical capacity to use Flood Risk Products and data to prepare for action? • Is the community facing barriers to applying for mitigation grants now and/or historically? • Is the community not ready to apply for mitigation or resilience grants because it needs to design the project, including project location? • Is there a lack of technical capacity to conduct studies, such as a Benefit-Cost Analysis (BCA) or loss avoidance analyses? • Does the community want to update floodplain management ordinances but lacks technical or staff capacity? • What do communities need to act on climate resilience information?	**Ordinance Assistance.** Assist communities in updating their floodplain management ordinances by supporting ordinance reviews and identifying applicable higher standards for local ordinance updates.	
	Mitigation Projects Scenario Modeling. Model mitigation scenarios for possible projects.	
	BCA Assistance. Assist communities in conducting comprehensive BCAs for proposed mitigation projects.[1]	
	Quantifying Benefits. Quantify the long-term social, economic and environmental benefits of proposed infrastructure investments.	
	Loss Projections and Loss Avoidance Analyses. Use the Flood Risk Assessment dataset to quantify potential future flood losses to existing structures, or use the Flood Risk Assessment dataset to provide data for Loss Avoidance Studies.	

[1] While PTS contractors can assist communities in performing BCAs as part of MPTA, a CTP cannot do BCA for communities as part of their technical assistance. CTPs can support communities to identify, capture and document the necessary data to run a BCA as well as understand how to run the FEMA-approved BCA model. Funds cannot be used to run a BCA.

Questions	*Example MPTA activities to consider*	*Suggested Phase*
	Technical trainings. Offer existing FEMA training resources or tailored trainings to communities.	
CONDUCTING OUTREACH AND ENGAGEMENT Is there a lack of capacity to communicate and build partnerships with communities? • Is there trust and ownership around flood risk data and products? • Does the community feel developing regulatory Flood Risk Products was a fair, rigorous process? • Does the community feel it can put risk information to good use? • Is the community aware of entities, organizations or key stakeholders in their areas that could be potential partners? • Does the community have a strategy for identifying and planning for cultural resources? This strategy may shape how the community talks to the public about risk. • Has a strategy around educating and working with community members been developed? • Does the community have a plan to build and execute an equitable engagement strategy?	Identify areas of the community in need of flood risk outreach and help develop outreach tools (e.g., use the data in the draft FIRM to identify residential, commercial and industrial structures in flood-prone areas).	
	Help local officials communicate with community members / communities about what the new floodplain boundaries mean for them, and how they can access resources to identify and implement mitigation measures.	
	Help local officials use the preliminary FIRM and draft Flood Risk Database to improve outreach, such as targeting meeting invitations to the properties most likely affected by updated floodplain maps.	
	Use Flood Risk Products to visually communicate flood risks to the public and/or enlist support for possible mitigation actions.	

In addition to the question prompts above, consider the cost of technical assistance, the effort needed by the community partner, team partner roles, and how the assistance will affect the community's risk and vulnerability in the long term.

Assistance Cost	Community Partner Effort	Team Partner Role	Assistance Impact
Lower Cost	Lower Effort	Bulding community trust, as a trusted advisor	Lower Impact
Medium Cost	Medium Effort	Making resources go further, faster, such as increasing access to resources	Medium Impact
Higher Cost	Higher Effort	Expanding technical capacity	Higher Impact

3. Outcomes

Whether formal or informal, integrating MPTA into the Risk MAP life cycle can amplify the impact of a Risk MAP project. Communities that have received effective technical assistance are better able to use Risk MAP data and tools to enhance their plans and make community planning decisions about land use and/or floodplain management. They are better also prepared to talk to residents and underserved communities about ways to reduce flood risk. When communities receive effective technical assistance, they are better positioned to reduce loss of life and property from future floods.

Regions and mapping partners should adopt a customer-centric approach to identify communities and what technical assistance to provide. A focus on communities will reveal new opportunities for technical assistance and will foster progress towards mitigation planning and Risk MAP life cycle goals.

3.1. Building Trust and Ownership

Customer-centric engagement is outreach that commits to putting the customer first in thinking and decision-making, allowing audience needs and perspectives to guide how we engage communities and empower them to act and build resilience.

It includes things such as communicating technical information in a non-technical way, and using active listening in meetings with communities. It may also include understanding what assets the community values. These may go beyond infrastructure to include areas or structures of historic or cultural significance. For MPTA, it also means working with communities to identify their goals and resource gaps. The goal is to provide them with technical assistance that will empower them to achieve specific resilience goals.

Project teams should work with SLTT stakeholders to understand the problems the community is facing from their own perspective. Teams should also learn about the community's overall priorities, not only those directly related to hazards. Projects that achieve multiple goals are more likely to be supported and carried out successfully. For example, if a community wants to increase recreational opportunities, projects that involve creating natural areas may find more support. Helping

communities develop relationships with other organizations that share their priorities can also increase support for hazard mitigation. The process of co-creating knowledge about both problems and solutions is even more important in underserved or disadvantaged communities. It is FEMA's goal to make equity a foundation of emergency management. Project teams can help achieve this through their interactions with communities. Giving all communities an equal voice, especially those with less experience or resources, is key to improving equity in hazard mitigation.

CASE STUDY: The community in this story went through the FEMA map update process and received new flood maps. Locals were concerned about what this would mean as far as their duties at the local level. Many townships felt understaffed and thought this additional task would overwhelm them. There were also concerns that mapping flood risk would dampen the local real estate market. Due to the number of newly mapped communities, FEMA decided to develop an NFIP 101 session as part of the technical assistance and outreach to help the communities understand what the program involved. Two officials from existing NFIP communities spoke about their experiences. They assured the others that the responsibilities were not overwhelming. They also offered resources to support any challenges that the new communities might face. The initial meeting helped ease the minds of community officials in the newly mapped areas. Many officials went from skeptics to embracing the process and participating throughout, including the three meetings. One community applied to join the NFIP by the third meeting, and a local tribe applied for a planning grant.

In this example, the project team listened to the local community and took the time to help local officials better understand the changes. This benefited the project in the long run because it built trust from the start.

The Community Engagement and Risk Communication (CERC) Tool Finder on the password-protected RMD SharePoint Portal provides more ready-to-use resources to optimize community engagement. There is also an Equity Tool Finder to identify tools related to equity and accessibility. These tools will help you create tailored messages and incorporate behavioral science principles into your engagement strategies. These actions will make flood risk relevant and meaningful for decision makers, community stakeholders and the public.

3.2. Community Planning Cycles and Flood Risk Projects

The sections below discuss MPTA during the flood risk project life cycle or the hazard mitigation planning cycle. These are often associated with MPTA, because these are times when communities want to engage with FEMA and CTPs. However, other community planning cycles can be supported by flood risk data, such as sustainability and land use planning, among others. Technical assistance can be provided at any time.

Figure 4. Connections Between MPTA and Hazard Mitigation Planning

3.2.1. FLOOD RISK PROJECT LIFE CYCLE

MPTA can occur throughout the Risk MAP life cycle. Risk MAP projects seek to reduce hazard risk by giving SLTTs access to quality hazard data and analysis. While comprehensive flood risk information is a product of all Risk MAP projects, other datasets may offer data analysis. The Risk MAP process is a time to engage with SLTTs to determine what other needs may exist. You can also explore how Risk MAP data could be better used by the community.

Figure 5. Flood Risk Project Life Cycle

A typical Risk MAP project consists of six steps. Each step produces its own products and tools. Many of the steps are associated with touchpoints where Project Teams exchange information with SLTTs. These touchpoints are times to discuss all hazards of interest with the community and their interconnectedness.

CASE STUDY: In this community, technical assistance was used to investigate and present potential flood mitigation alternatives to reduce flooding issues. The goal was to address flooding issues from the local tributary, while allowing for future development and increasing resilience. Technical assistance to identified cost-effective mitigation options that would lower flood insurance costs and negatively affect the community. A report outlined existing conditions, existing flooding concerns, mitigation alternatives and cost estimates. At the conclusion of the technical assistance project, three of the scenarios were chosen as feasible options for budget-level cost estimating. After the flood risk was identified, MPTA provided the opportunity to move on to mitigation planning and action.

3.2.2. HAZARD MITIGATION PLANNING CYCLE

Hazard mitigation plans are the foundation for a community's long-term hazard mitigation strategy. Federal law requires SLTTs to develop and adopt hazard mitigation plans to receive certain types of non-emergency disaster assistance. Federal regulations also require that communities update hazard mitigation plans at least every five years to remain eligible for assistance. FEMA must approve them.

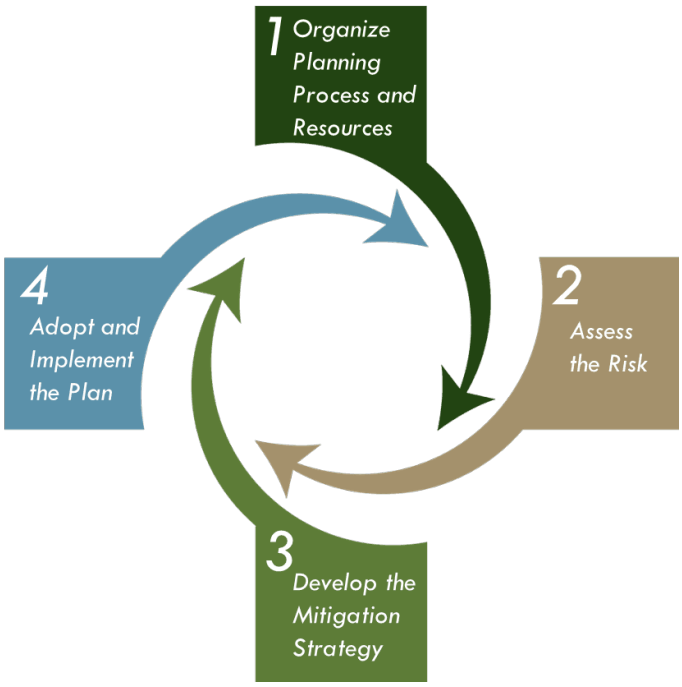

Figure 6. Hazard Mitigation Planning Cycle

Hazard mitigation plans provide a framework for mitigation actions across local and regional agencies. They include four key steps:

- Organize the Planning Process and Resources – The planning process documents what decisions are made and how; who was involved and what they did; and how the overall process was captured in the plan. A successful hazard mitigation plan must have the participation and engagement of the planning team, stakeholders and the public.
- Assess Risks and Capabilities – A risk assessment identifies vulnerable assets. These can include structures, systems, populations and other community assets at risk from identified hazards.
- Develop a Mitigation Strategy – The mitigation strategies identified in a hazard mitigation plan should engage all programs with mission areas relevant to hazard mitigation and reducing the loss of life and property from future natural hazard events.
- Adopt and Implement the Plan – Plan adoption is critical to the long-term success of a community's mitigation strategy. Plan adoption requires the buy-in of elected officials, sets expectations for hazard mitigation plan implementation roles and responsibilities, and ensures eligibility for FEMA's HMA and High Hazard Potential Dam grant funding.

Future Conditions

State and local hazard mitigation plans must include climate change effects and other future conditions in the risk assessment. FEMA's Hazard Mitigation Planning policies and guidance also emphasize the importance of adopting and enforcing building codes and land use and development ordinances in the local government's ability to mitigate.

FEMA defines future conditions as the future effects of these trends on hazard risk:

- Climate
- Demographics
- Land use and community planning

These three elements can strongly influence future disaster risk. Planning for the future effects of hazards, and being aware of how present-day decisions affect them, should be a key part of community planning. They should also be a part of mitigation project decisions.

FEMA regional staff and mapping partners can provide data and expertise to help communities incorporate these considerations into future plans through MPTA.

3.2.3. OPPORTUNITIES FOR SYNERGIES BETWEEN MPTA AND COMMUNITY PLANNING

Do not limit your conversations with communities about planning cycles and opportunities to hazard mitigation plans. Other plans, such as sustainability, land use or comprehensive plans, can also benefit from MPTA. Opportunities may include:

- Identifying datasets that can inform these planning processes.
- Helping communities with engagement around these plans as they relate to natural hazards.
- Helping the community find ways to align the plans.

Aligning the goals of multiple plans can create support for hazard mitigation projects.

CASE STUDY: It is important to ensure that states have the appropriate regulations, statutes, authorities and processes in place to meet NFIP standards for state-owned and –managed development. One technical assistance project investigated a state's floodplain management standards. The standards are in multiple acts, codes and regulations. Several agencies implemented and enforced them for compliance and consistency with the NFIP requirements. The technical service provider gave detailed findings and recommended specific corrective actions to help the state remain compliant with the NFIP. This is an example of how MPTA was used to ensure all regulations, statutes and authorities met NFIP requirements. As mentioned above, aligning goals and requirements can create support for mitigation projects.

3.2.4. BUILDING CODES AND ORDINANCES

MPTA can also help communities strengthen building codes and ordinances related to natural hazard risk.

Under MPTA, project teams can provide analysis and other support for improving building codes to address natural hazard risk. Building code updates can be a cost-effective way for communities to reduce future disaster impacts. FEMA's Building Codes Save study demonstrates that cities and counties with modern building codes avoided $132B in losses over a 20-year period by increasing protection from natural hazards.

MPTA can also be used to assess existing ordinances and assist communities in developing higher regulatory standards to protect from disaster losses. These include flood ordinances, those for other natural hazards, and land use and zoning ordinances.

CASE STUDY: A community was devastated by flooding and the wind impacts from a Category 5 hurricane. Most structures were damaged or destroyed. The need was to analyze the gaps in immediate assistance and to prepare a resilient redevelopment plan. Multiple types of technical assistance were provided to the city including overseeing debris removal, development of a Resilient Redevelopment Plan, and preparation of Project Worksheets for restoration and resilience of infrastructure through a Public Assistance program. By finding the gaps in immediate assistance and through preparing the hazard mitigation plan, additional technical assistance in the form of preparation of other mitigation grant applications like HMGP, CDBG-DR, and state funds was provided. Technical assistance was also provided to help the city consider higher standards in its building codes and floodplain ordinance. The city adopted these standards. With technical assistance, the city also adopted a successful multi-pronged mitigation approach combining local policy changes, state assistance and federal grant assistance. The plan was prepared, and local measures are in place for a more resilient rebuild. Many of the mitigation grants have been approved.

3.3. Advancing Equity through MPTA

Project Teams can advance equitable outcomes through MPTA by developing insights about a community and using those insights to tailor community engagement. Learning a community's key needs, social factors and culture (e.g., lifestyle, local attitudes and behavior, beliefs, demographics, education, social mobility, religion, local history and recent events) will align technical assistance with each community's unique needs. Consider who will be affected by flood and other hazards, and who should be take part in engagement efforts.

Key Stakeholders	Roles and Process
Regional Risk MAP program	In coordination with Regional Mitigation Planners, the Risk MAP program creates a strategy for, oversees, and moves any technical assistance requests forward. Identifying technical assistance often occurs yearly, with flexibility for additional changes as needs arise.
Regional Mitigation Planners	Key partners to the Risk MAP regional program. They identify technical assistance needs and inform specific technical assistance focus areas based on plan content.
Regional Risk MAP Program Contracting Officer Representatives (COR)	For questions about MPTA ordering and contracting.
CTPs or other mapping partners	In coordination with state stakeholders, state mapping partners create a statewide strategy and propose technical assistance projects via the five-year business planning process. This business plan is submitted and reviewed via the CTP NOFO by the FEMA Risk MAP Regional program.
Risk MAP Project Team	The Risk MAP Project Team oversees the production of the risk products and data. It is at the center of any MPTA project team. There are typically teams for each jurisdiction.
MPTA Project Team	Once technical assistance projects have been approved, a project team is identified to help conduct the assistance with the community. These teams are tailored based on the technical assistance identified.
SLTTs receiving MPTA	At the center of each technical assistance project is a community that receives the assistance. As partners, they share needs to tailor support. If a community is interested in technical assistance, they should reach out to either the FEMA Regional Risk MAP program or a state mapping partner, like a CTP.
Floodplain Management & Insurance	Key partners on MPTA project teams, especially those focused on outreach, communication, training and ordinance support.
State or Tribal partners	State NFIP Coordinators, SHMOs, state mitigation planners, and state floodplain management staff inform priorities and MPTA with their sense of community need and statewide priorities. For example, state hazard mitigation program staff track local hazard mitigation plan status and updates. They also tend to have a broad perspective on mitigation needs and opportunities based on their knowledge of active mitigation projects in the state's diverse communities.

Advancing equitable results may involve:

- Inclusion and Collaborative Decision Making: make the process, meeting plans and materials culturally responsive and accessible.
- Language and Information Sharing: make a meeting plan(s) or document(s) that includes languages of the community. Use jargon-free language in documents/materials/presentations. Minimize technical language when speaking with non-technical audiences.
- Data Use, Storytelling and Images: use images that represent the people who live in the community. Include quotes or stories from community members with relevant experiences.

Working with a trusted organization or individual in the community will help build relationships and offer technical assistance in ways that are more accessible and acceptable. Without a good grasp of your audience, it is hard to develop tools and resources that meet their needs.

4. Menu of Activities

A menu of structured technical assistance activities is in Appendix A of this document. Project Teams can integrate these activities into Risk MAP flood risk projects to advance local mitigation planning. They can also order these as standalone activities to assist SLTTs. The activities help communities effectively execute risk-based mitigation planning. This leads to sustainable actions that reduce loss of life and property and the associated economic impacts.

The activities listed in the menu meet the guidelines in Section 2.4 for FEMA Project Teams to perform MPTA and training. Any new or innovative actions that support these activities may also be considered. Project teams should discuss community needs and possible solutions with their region.

The menu is arranged into the following sections:

Technical Assistance Type	Activity Category
Training	EMI Instructor Led
	EMI Independent Studies
	Training On-Demand
Outreach	CCO and Open House Meetings
	Strategic Planning for Community Engagement
Mitigation Planning	Organize Resources Phase
	Risk Assessment Phase

Technical Assistance Type	Activity Category
	Develop Mitigation Strategy Phase
	Monitoring and Maintenance Phase
Mitigation Projects	Support Activities for Mitigation Projects
Risk Products	Flood Risk Product Enhancement and Interpretation
	Mitigation Planning Analysis
	Loss Projection and Loss Avoidance Analyses
	Other Support Activities
Risk Datasets	Coastal Specific Datasets
	Levee Specific Datasets
	Dam Specific Datasets
	Natural Risk Datasets
Risk MAP Life Cycle	Discovery Support
	Mapping Support
	Preliminary FIRM Support
	Risk Assessment Support
	Effective Issuance Support
	Mitigation Action Support

5. Ordering MPTA

Regional Risk MAP, mitigation planning, and other relevant staff should work together to select technical assistance activities. For questions about ordering MPTA, please reach out to the Regional Risk MAP Program COR.

To ensure alignment of proposed efforts, a project charter may be developed along with the scope of work and ordering process.

The following activities should be completed to appropriately order technical assistance or training:

1. Define the scope of the technical assistance (including communities and/or planning teams involved, number of potential meetings, etc.).

2. Identify deliverables, such as a mitigation project alternatives analysis and/or enhanced risk assessments.
3. Develop a schedule.
4. Develop a cost estimate.

CTPs should include known scope and budget information in the Community Outreach and Mitigation Strategy and/or Mapping Activity Statement and associated Business Plans. For general information about CTP Scopes of Work and templates, visit the Mapping Activity Statements and Statements of Work website. CTPs should follow the normal procurement process. Additional mitigation planning technical assistance projects can also be determined throughout the Risk MAP project life cycle and added to CTP planning documents.

APPENDIX A: MPTA PROJECT MENU

FEMA

Please use the navigation above to move throughout the document.

This appendix presents a selection of technical assistance activities. Project Teams can use these activities to advance local mitigation action. The activities are intended to help communities effectively execute risk-based mitigation planning, leading to sustainable actions that produce a measurable reduction in the loss of life and property and the associated economic impacts. Communities with effective risk-based mitigation plans can pursue an array of federal, state, and local programs to fund their goals. These may include FEMA's HMA programs, as well as private-sector investments.

While these projects may be integrated into Risk MAP projects, RMPTA may also be used for communities that are not in the Risk MAP process.

Project Teams can also provide technical assistance through informal interactions with state or tribal hazard mitigation officers or planners, and local planning teams. Project Teams should emphasize their interest in understanding and resolving community challenges. This customer-centric approach will reveal additional opportunities to assist communities.

The technical assistance provided through Risk MAP should not be limited to assistance with preparing or updating a plan. Rather, technical assistance should focus on building the capability of a community to plan for and reduce risk.

This list of sample activities meets the guidelines in Section 2.4. FEMA Project Teams can use them to perform MPTA and training. Any new or innovative actions that support these activities may also be considered.

THE MENU IS ORGANIZED INTO THE FOLLOWING SECTIONS:

- Training and Capacity Building
- Community Outreach & Engagement
- Hazard Mitigation Planning Support
- Mitigation Project Support
- Flood Risk Products
- Datasets
- Risk MAP Life Cycle

This document is not a comprehensive list of technical assistance projects. Project teams are encouraged to be creative in meeting community needs, within the restrictions of the MPTA Program. Please discuss community needs and potential solutions with your FEMA Regional Staff.

TRAINING AND CAPACITY BUILDING

Project Teams may offer several existing FEMA training resources to communities in flood risk project study areas. These training resources will improve a community's ability to mitigate. Examples of workshops, courses and other training offered by FEMA and its providers are organized by subsection below.

EMI Instructor-Led Training

These trainings are delivered through the Emergency Management Institute either on campus, at an offsite classroom location, or virtually. For more information, click here.

	Description
L-329: State Mitigation Planning Training	This two-day classroom course examines the requirements and approaches for effectively advancing mitigation at the state level. Partners interested in attending or having FEMA conduct a field delivery of L-329 or other training should review the L-329 fact sheet and contact their FEMA regional office.
L/K-318 Local Hazard Mitigation Planning Training	This course expands mitigation planning training beyond regulations and includes guidance for communities to craft plans that are effective throughout the 5-year approval period and beyond. The instructor-led course can be delivered in-person or virtually. The 16-hour course can be completed in two days over multiple days split between several sessions. Note: this course replaces G-318 Local Mitigation Planning Workshop.
E190: ArcGIS for Emergency Managers	This course provides the essential ArcGIS skills and knowledge needed to use the Hazus software. The course combines lectures with hands-on exercises that present practical examples of using GIS for disaster mitigation and response. Course topics will include an introduction to GIS concepts; tools for symbolizing data; tools for querying and analyzing data; data management; working with tabular data; understanding coordinate systems; basic editing; spatial data adjustment; geocoding; and a review of some of ArcGIS's advanced options. It also reviews the Spatial Analyst extension, geocoding and raster data.
E0212: Unified Hazard Mitigation Assistance: Developing Quality Application Elements	This course educates participants on the process of preparing and submitting quality HMA grant programs planning and project sub-application elements. For communities with limited capacity, funding assistance may be necessary to implement mitigation projects.
E0214: Unified Hazard Mitigation Assistance: Project Implementation and Closeout	This course gives participants the knowledge and skills they will need to implement and close out a Hazard Mitigation Assistance grant project. Again, for those communities with limited capacity, funding assistance may be necessary to implement mitigation projects.

EMI Independent Studies

These are on-demand trainings available through the Emergency Management Institute website. For more information, click here.

	Description
IS-329 State Hazard Mitigation Planning Training	This course introduces state officials to the policies and procedures for updating State Hazard Mitigation Plans (as outlined in the 2015 State Plan Review Guide). It will help them effectively use the planning process to advance mitigation. More information about this independent study is available in the IS-329 factsheet.
IS-350: Tribal Hazard Mitigation Planning Training	This course provides tribal officials, planners, emergency managers, and other partners with the information necessary to prepare and implement a Tribal hazard mitigation plan. The emphasis is on getting the right people to the table and working through the full planning process.
IS-922: Applications of GIS for Emergency Management	This online course explores how GIS technology can support the emergency management community. Topics include GIS fundamentals and history, how GIS is used in emergency management, and tools available to enhance GIS usefulness.
IS-2101: Cooperating Technical Partners (CTP) 101 Beginner Training Course	This course provides a broad overview of the CTP Program, including mission, activities (including mitigation), funding processes, and available tools and resources. Students should gain an understanding of how the program operates and how they can be successful FEMA partners when incorporating mitigation planning technical assistance into Flood Risk Projects.
IS-276A: Benefit Cost Analysis Fundamentals	This course provides an overview of fundamental BCA concepts and theory. It is the framework and prerequisite for the classroom, field or facilitated distance learning BCA course.
IS-277A: Benefit-Cost Analysis: Entry- Level	This course is an introduction to the fundamental concepts of BCA. Participants will learn how to obtain BCA data and conduct analyses using the latest version of the Benefit Cost Toolkit. Level-two BCA is not covered in this course.

Trainings Available Upon Request

These trainings are delivered by FEMA. They are delivered by request through the regional mitigation planning staff.

	Description
Hazard Mitigation for Non-Planners	This 2-part webinar introduces non-planners to the framework and the legislative basis for hazard mitigation planning. This training also provides advice on how to develop an HMP, with an emphasis on interpreting the planning requirements set forth in the CFR. This content for this training is available on the password protected RMD portal. **For more information,** click here for part 1, **and** here for part 2.
Planning for a Resilient Community	This workshop enhances the effectiveness of community planners and officials in creating safe, resilient communities through hazard mitigation. It includes interactive exercises and specific examples to help participants identify the role of the community planner in making communities more resilient, discuss the relationship between the impacts of hazards and community design, implement mitigation through local plans and policies, consider key planning issues they may face during disaster recovery, and explain the value of mitigation in improving community resilience. For a PDF of course materials click here.
Integrated Hazard Mitigation Planning	This two-part webinar is intended for community planners, emergency managers, and local officials. The webinar reviews how to use local planning tools and plan integration to implement actions that reduce risk, and how to coordinate with departments across multiple agencies. This content for this training is available on the password protected RMD portal (see links below). **For more information,** click here for part 1, **and** here for part 2.
Connecting the Community Rating System to Hazard Mitigation Planning	This training helps FEMA and state partners support local governments in meeting the requirements for both the Community Rating System and a FEMA-approved hazard mitigation plan. The training outlines areas of overlap and support to help communities maximize the benefit of existing planning efforts. Participating in the Community Rating System serves not only to reduce flood risk and lower flood insurance premium rates for policyholders, but can sometimes help projects qualify for other federal assistance programs as well. For communities with limited capacity, this assistance can support mitigation activities that might not otherwise be possible. This content for this training is available on the password protected RMD portal (see link below). See also Mitigation Planning and the Community Rating System: Key Topics Bulletin. **For more information,** click here.
Mitigation Measures—Actions for Community Resilience	This webinar is intended for emergency managers, hazard mitigation planning committee members, and/or community stakeholders. Training is provided in the following mitigation action categories: prevention, property protection, natural resource protection, emergency services, structural projects, and public information. Training is available upon request from your region.
Using Digital Flood Hazard Information	This training will familiarize communities with FEMA's digital flood hazard data. It focuses on how communities can leverage digital flood hazard information to support local planning and flood hazard management decisions. Training is available upon request from your region.
Flood Risk Products Training	This hands-on training focuses on the use of FEMA Depth and Analysis Grids to reduce flood risk. Participants learn how to access and download Flood Risk Products for their community. They will also practice using Depth and Analysis Grids with local datasets to identify high-risk areas and to assess risk and develop mitigation strategies.
The Flood Provisions of the International Codes and ASCE 24	This workshop provides basic information needed to understand the flood provisions of the International Codes and ASCE 24, Flood Resistant Design and Construction, and the importance of coordinating local floodplain management ordinances with building codes. The 2009 and later editions of the I-Codes contain flood-resistant provisions that FEMA deems to be consistent with the NFIP. Participants will learn how the I-Code provisions that meet NFIP regulations; understand the relationship between the I-Codes and ASCE 24; learn about distinctions between the I-Codes and ASCE 24, and the NFIP regulations; and learn the importance of coordinating the I-Codes with local floodplain management ordinances. This is a Building Science training and available upon request from your region.

COMMUNITY OUTREACH AND ENGAGEMENT

Community Outreach and Engagement activities include technical efforts designed to help build risk awareness and understanding at the local level. They increase a community's ability to communicate risk at the local level, support local efforts to reduce natural hazard risk within a community or watershed area (e.g., complete mitigation actions), and to keep communities and other stakeholders engaged throughout the Risk MAP process.

Local, state, and federal stakeholders should remain actively engaged throughout each step of a Flood Risk Project. Engagement with these stakeholders will enable the FEMA Project Officer and other Project Team members to accomplish the following:

- Work with community officials and stakeholders on areas of emphasis for public outreach and develop outreach strategies that reflect the latest available information on natural hazard risk and appropriate mitigation measures.
- Educate community officials and stakeholders about flood risk datasets and products that are available and how to use them to increase flood risk awareness and encourage flood risk reduction activities.
- Educate community officials and stakeholders on funding and other support resources available from FEMA (or others) to help implement mitigation measures.
- Encourage community officials to take the lead in communicating with the public about natural hazard risks and actions that they can take to reduce them.
- Increase the ability of a community and/or its residents to plan for and take mitigation actions.

CCO and Open House Meetings

These are on-demand trainings available through the Emergency Management Institute website.

	Description
Develop Outreach Tools	Identify areas of the community in need of flood risk outreach and help develop outreach tools (e.g., use the data in the draft FIRM to identify residential, commercial, and industrial structures located in flood-prone areas).
Support Local Official Communication	Help local officials communicate with attendees about what the new floodplain boundaries mean for them, and how they can access resources to identify and implement mitigation measures.
Support Targeted Outreach	Help local officials use the preliminary FIRM and draft FRD to improve outreach, such as targeting meeting invitations to the properties most likely to be affected by updated floodplain maps.
Visually Communicate Flood Risk	Use flood risk products to visually communicate flood risks to the public and/or enlist support for possible mitigation actions.

Strategic Planning for Community Engagement

Community Engagement involves outreach activities with the purpose of strategically preparing for project engagement with watershed communities throughout a project's lifecycle. Goals of this engagement are to help create understanding and ownership of the mapping process at state and local levels and to encourage communities to take responsibility for advancing actions that will result in a more resilient community. Potential Community Engagement processes are listed below. PTS will support CERC with technical resources for engagement purposes.

	Description
Integration Planning	Activities include conducting regular, cross-Mitigation meeting(s) for the watershed and/or project area (with emphasis on priority communities) to refresh community profile(s) and develop plans for advancing relationships and mitigation action.
Community Outreach Strategy	Provide production and technical support for the development and implementation of a Communication and Outreach Strategy as well as project specific outreach activities including various ad-hoc or regionally defined engagement. Examples could include expanded kick-off meetings, stakeholder coordination, engagement or communications planning, and specialized training.
Process Technical Support	Activities include technical support for implementation of the strategic process efforts, which could include: Participate in meetings and technical discussions; support coordination and follow through for risk awareness; provide data and/or resources to assist in increasing regulatory product adoption and acceptance; and provide resources and/or data to support mitigation discussions and activities throughout the Risk MAP project lifecycle.
Other	Other activities include additional related technical services to be defined by the Region. Could include technical counsel and development of exhibits to support community engagement between official Risk MAP meetings.

HAZARD MITIGATION PLANNING SUPPORT

FEMA

Risk MAP Flood Risk Project Teams engaged in the Project Planning step can build mitigation planning technical assistance into the Discovery process. Technical assistance can also support the Hazard Mitigation Planning cycle.

Stakeholder Engagement

Engaging with state and local stakeholders in hazard mitigation planning is key for MPTA to be effective (See FEMA Guidance for Stakeholder Engagement). State and local groups with a stake in hazard mitigation planning include the state NFIP Coordinator, state or tribal mitigation officers or planners, and members of the steering committees involved in previous hazard mitigation plans. Local groups that represent and speak for underserved and disadvantaged communities should be included to account for a broader range of needs and engagement methods. Project Teams can reach out through the hazard mitigation planning process to help remove barriers that may have limited a community's ability to prepare for, weather and recover from disaster events. Working alongside communities to tailor solutions that respond to their unique needs will advance inclusive community engagement practices that lead to equitable outcomes.

	Description
Establish Partnerships with State Silver Jackets Teams	Many of the relevant federal and state stakeholders can be engaged through a state's Silver Jackets team. Information about the US Army Corps of Engineers Silver Jackets program can be found at https://silverjackets.nfrmp.us/. These state-led teams link federal and state agencies involved in hazard mitigation, emergency management and floodplain management to reduce flood risk. The collective resources of the participating agencies can help Project Teams develop and deliver targeted technical assistance to communities in the project area.
Establish Partnerships with local Hazard Mitigation Planning Steering Committee	Many of the relevant local stakeholders can be engaged through local hazard mitigation planning steering committees. Key local stakeholders include GIS specialists, planning staff, public works staff, and the permitting and enforcement staff. Involving multiple departments brings unique experiences and perspectives to the table, and allows the lessons, data, and relationships developed through a flood risk project to be integrated into a range of community processes and operations. For example, information on natural hazard risk can inform comprehensive planning, capital improvement planning, building and site development, zoning ordinance amendments, and emergency management plans.

Risk Assessment Phase

	Description
Risk Assessment Phase	For communities in the Assess Risks phase of mitigation planning, Project Teams can assist community agencies and officials in using the Risk MAP Discovery Map and Report to enhance risk assessments. These Discovery products can help locate the areas that are likely to be affected by different hazards. They can also identify the people, property and assets that are most vulnerable to these hazards.
Non-Flood Hazards	The Discovery process is also an opportunity to identify technical assistance needs for hazards other than flooding. In Bannock County, Idaho, for example, the Discovery process led to requests for multi-hazard outreach materials and risk assessments. Community stakeholders requested more information on the risk of avalanche, drought, earthquake, landslide, liquefaction, rail lines and hazardous cargo, severe storms, and wildfires. By discussing community priorities during the Discovery process, Project Teams can position the Flood Risk Project to address the project area's most pressing needs.

Develop Mitigation Strategy Phase

	Description
Develop Mitigation Strategy	To help prioritize mitigation actions, Project Teams can assist state and community agencies in using preliminary and draft products to assess relative risks and vulnerability to community members, businesses as well as other assets, such as lifelines. For example, Project Teams can help communities use the data in the FIRM Database to identify the areas with the highest concentrations of renter or owner occupied flood-prone structures, or the critical facilities and lifelines most vulnerable to flooding.
BCA Support	Technical assistance can also assist agencies in conducting comprehensive cost-benefit analyses for proposed mitigation projects. Communities often struggle to quantify the long-term social, economic, and environmental benefits of proposed mitigation investments. Nature-based solutions / green infrastructure, for example, provides many environmental and public health benefits that may be difficult to translate into dollars and cents. By developing a methodology to quantify the multiple benefits of proposed mitigation actions, Project Teams can help communities more effectively allocate limited resources.

Monitoring and Maintenance Phase

	Description
HMP Monitoring and Maintenance	For communities in the Implement the Plan and Monitor Progress phase, Project Teams can assist community agencies and officials to use Risk MAP Discovery products to track progress on previously identified mitigation actions. They can also be used to assess changing risks and priorities. To help communities track progress, Project Teams can request information on mitigation successes and challenges in Discovery questionnaires, or build discussion of mitigation priorities and needs into Discovery meetings. To help communities assess changing risks and priorities, Project Teams can help community officials utilize the data compiled in the Risk MAP Discovery Map and Discovery Report.
Plan Updates	Project Teams can help local officials use the preliminary FIRM and FIS report to update or validate their risk assessment or enhance their plan maintenance process.

MITIGATION PROJECT SUPPORT

FEMA

Leveraging Risk MAP data, decision support analysis, products and/or processes; support communities to identify and advance mitigation actions that reduce flood and natural hazard risk.

Activities

	Description
Community Prioritization	Provide production and technical support for prioritizing communities within a watershed based on action potential and contribution to the action target to define the level of personalized engagements communities receive.
Identifying Mitigation Scenarios and Projects	Provide data, processes or analysis to help communities identify mitigation opportunities or select between alternatives. Data: New data or aggregation of existing data delivered and disseminated in formats readily consumed by the end user. Analysis: Risk assessments or other technical analyses to help identify solutions to identified problems or project solutions.
Advancing Mitigation in Communities	Technical support for communities to advance mitigation opportunities. This includes scoping/design support; budgeting; identifying potential resources or funding sources; project planning support; technical support for zoning and ordinance development; and outreach strategies for project support.
Evaluation and Valuation	Technical support for communities to evaluate and demonstrate the value of the mitigation investment. This includes calculating economic, environmental and/or social benefits, cost, and/or losses avoided from current and projected natural hazard events.
Other	Regions may offer other related technical services.

FLOOD RISK PRODUCTS

FEMA

The Flood Risk Database enables the creation of other products such as the Flood Risk Map and Flood Risk Report. The Contractor must deliver Flood Risk Datasets that comply with the Flood Risk Database Technical Reference. Flood Risk Products include activities related to developing and delivering flood risk products and datasets. Specifically, the Flood Risk Products include the Flood Risk Report, the Flood Risk MAP, and the Flood Risk Database. These products and their associated standard (and enhanced) datasets are non-regulatory and intended to support local risk awareness and mitigation.

Flood Risk Product Enhancement and Interpretation

	Description
Flood Risk Map	The Flood Risk Map activity includes developing exhibits that depict flood risk datasets and base-mapping information. This is an optional product to produce for a flood risk project.
Flood Risk Report	The Flood Risk Report activity includes data development and technical support for documenting and delivering a summary of watershed and local flood risk information to local communities. It also includes best practices for risk reduction. This is an optional product to produce for a flood risk project.
Data Delivered in Flood Risk Database	This is not an activity that can be ordered. It is a yes/no question to document future intent. The Flood Risk Database is a standard flood risk product.
Enhanced GIS	Strengthen GIS elements of the Flood Risk Report and FRM.
Enhanced FRD Data Analysis	Interpret and analyze the datasets in the FRD.
Enhanced CSLF Data	Use the CSLF dataset to update areas at risk in flood zones.

Mitigation Planning Analysis

	Description
Integrating Flood Risk Data	Use the Flood Depth and Analysis Grid dataset to integrate flood risk data with local data on structures and residents to prioritize mitigation actions based on risk.
Plan Alignment using CSLF Dataset	Use the CSLF dataset to inform development decisions, land use and transportation planning, evacuation plans, or where flood mitigation may be needed.
Quantify Mitigation Benefits using Flood Depth and Analysis Grid	Use the Flood Depth and Analysis Grid dataset to help screen for cost-effectiveness of potential mitigation projects or to integrate flood risk information into local permitting decisions.
Identify and Quantify Mitigation Benefits using FRA Dataset	Use the Flood Risk Assessment dataset to identify areas where mitigation activities may produce the greatest return on investment, areas requiring higher building code requirements, or use of flood-resilient designs and construction.
Quantify Mitigation Benefits using FRA Dataset	Use the Flood Risk Assessment dataset to screen for cost-effectiveness of potential mitigation projects.
Analyze and Prioritize Mitigation Projects using AoMI dataset	Use the AoMI dataset to prioritize mitigation actions, identify and prioritize capital improvement projects or promote watershed-scale approaches to hazard mitigation.

Loss Projections and Loss Avoidance Analyses

	Description
Quantify Future Losses	Use the Flood Risk Assessment dataset to quantify potential future flood losses to existing structures.
Support Loss Avoidance Studies	Use the Flood Risk Assessment dataset to provide data for Loss Avoidance Studies.

Other

	Description
Ordinance Assistance	Help communities update their floodplain management ordinances. This includes supporting ordinance reviews or supporting the region or state in making a case for adopting higher standards.
Funding Opportunities and Best Practices	An optional Resilience Meeting about funding opportunities or best practices for floodplain management (such as CRS or HMA program funding); to help communities enforce floodplain management ordinances; or implement watershed-scale approaches.

Flood Risk Products - Enhancement and Interpretation

	Description
Flood Risk Map	The Flood Risk Map activity includes developing exhibits that depict flood risk datasets and base-mapping information. This is an optional product to produce for a flood risk project.
Data Interpretation & Analysis	Interpret and analyze the datasets in the FRD.
CSLF Dataset	Technical assistance related to the CSLF dataset can help communities:
	Update areas at risk in flood zones.
	Determine where flood mitigation may be needed.
	Inform development decisions and land use and transportation planning.
	Update evacuation plans.
	Communicate changes in flood risk and mitigation priorities to homeowners and other property owners.
Flood Depth and Analysis Grid Dataset	Technical assistance related to the Flood Depth and Analysis Grid dataset can help communities:
	Integrate flood risk data with local data on structures and residents to prioritize mitigation actions based on risk.
	Couple flood risk data with local data on transportation facilities to develop evacuation plans and prepare for road closures.
	Communicate flood risk to elected officials and key local leaders to enlist support for possible mitigation actions.
	Communicate elevation requirements for specific sites to building officials, property owners, and developers.
	Integrate flood risk information into local permitting decisions.
	Provide data to help screen for cost-effectiveness of potential mitigation projects.
Flood Risk Assessment Dataset	Technical assistance related to the Flood Risk Assessment dataset can help communities:
	Quantify potential future flood losses to existing structures.
	Identify areas where mitigation activities may produce the greatest return on investment.
	Identify areas requiring higher building code requirements or use of flood-resilient designs and construction materials.
	Provide data to help screen for cost-effectiveness of potential mitigation projects.
	Provide data for Loss Avoidance Studies.
Areas of Mitigation Interest Dataset	Technical assistance related to the AoMI dataset can help communities:
	Prioritize mitigation actions.
	Identify and prioritize capital improvement projects.
	Visually communicate flood risks to the public.
	Promote watershed-scale approaches to hazard mitigation.

DATASETS

The Flood Risk Database enables the creation of other products such as the Flood Risk Map and Flood Risk Report. The Contractor must deliver Flood Risk Datasets that comply with the Flood Risk Database Technical Reference. Flood Risk Products include activities related to the development and delivery of flood risk products and datasets. Specifically, the Flood Risk Products include the Flood Risk Report, the Flood Risk MAP, and the Flood Risk Database. These products and their associated standard (and enhanced) datasets are non-regulatory and intended to support local risk awareness and mitigation.

General Flood Risk Datasets

	Description
Changes Since Last FIRM	This activity includes the creation of Changes Since Last FIRM for areas receiving updated flood study information. This standard dataset is to be included and delivered within the Flood Risk Database product when applicable.
Flood Risk Analysis Raster Layers (Percent Annual Chance)	This activity includes the creation of the Percent Annual Chance Raster Layer for areas receiving updated flood study information. This standard dataset is to be included and delivered within the Flood Risk Database product.
Flood Risk Assessment Results (User Defined Analysis or Census Block)	This activity includes the creation of the Flood Risk Assessment Results at a census block level or User Defined Analysis for areas receiving updated flood study information. This standard dataset is to be included and delivered within the Flood Risk Database product.
Flood Risk Analysis Raster Layers (Percent 30-yr Chance)	This activity includes the creation of the 30-year Chance Raster Layer for areas receiving updated flood study information. This standard dataset is to be included and delivered within the Flood Risk Database product.
Areas of Mitigation Interest (AoMI)	This activity includes the creation of the Areas of Mitigation Interest for areas receiving updated flood study information. This standard dataset is to be included and delivered within the Flood Risk Database product.
Increased Flooding Scenario Areas	This activity includes the creation of the Increased Flooding Scenarios dataset (such as plus 1 ft freeboard) for areas receiving updated flood study information. This enhanced dataset is to be included and delivered within the Flood Risk Database product.
Water Surface Elevation Raster	This activity includes the creation of Water Surface Elevation Raster for areas receiving updated flood study information. This standard dataset is to be included and delivered within the Flood Risk Database product.
Flood Risk Analysis Raster Layer (Water Surface Elevation Change)	This activity includes the creation of the Water Surface Elevation Change raster for areas receiving updated flood study information. This enhanced dataset can be included and delivered within the Flood Risk Database product.
Flood Risk Analysis Raster (Velocity)	This activity includes the creation of Velocity Raster (Layers) for areas receiving updated flood study information. This enhanced dataset can be included and delivered within the Flood Risk Database product.
Depth Raster	This activity includes creation of the Depth Raster dataset depicting flood depths developed within the levee study areas identified in this SOP. This standard dataset is to be included and delivered within the Flood Risk Database product.
Depth & Velocity Severity Raster	This activity includes the creation of Depth & Velocity Severity (DxV) raster for areas receiving updated flood study information. This enhanced dataset can be included and delivered within the Flood Risk Database product.
Critical Facility	This activity includes the creation of Critical Facilities data for areas receiving updated flood study information. This enhanced dataset is to be included and delivered within the Flood Risk Database product.
Other	Other activities include additional technical services related to Flood Risk products to be defined by the Region. Examples could include development of non-flood datasets such as multi-hazard risk assessments, data development and analysis reporting.

Coastal Specific Flood Risk Datasets

	Description
Simplified Coastal Zones	This activity includes the creation of the Simplified Coastal Zones dataset, to illustrate potential severity of coastal flooding, for areas receiving updated flood study information. This enhanced dataset is to be included and delivered within the Flood Risk Database product.
Dune Size and Location	This activity includes the creation of the Dune Size and Location dataset for areas receiving updated flood study information. This enhanced dataset is to be included and delivered within the Flood Risk Database product.

Levee Specific Flood Risk Datasets

	Description
Levee Scenario Lookup Table	This activity includes the creation of Scenario Lookup Table for locations within the levee project area. This enhanced dataset is to be included and delivered within the Flood Risk Database product.
Levee Analysis Impact Areas (including Levee Shadow)	This activity includes creation of the Levee Analysis Impact Areas dataset depicting flood hazard areas resulting from analysis for the levee study areas identified in this SOP. This enhanced dataset is to be included and delivered within the Flood Risk Database product.
Community-Supplied Breach and Armored Overtopping Locations	This activity includes creation of the Community-Supplied Breach and Armored Overtopping Points dataset, if applicable to the levee study areas identified in this SOP. This enhanced dataset is to be included and delivered within the Flood Risk Database product.
Levee Location	This activity includes the creation of the Levee Location dataset for levee areas receiving updated flood study information. This enhanced dataset is to be included and delivered within the Flood Risk Database product.
Levee Freeboard	This activity includes the creation of the Levee Freeboard dataset depicting freeboard along various levee segments receiving updated flood study information. This enhanced dataset is to be included and delivered within the Flood Risk Database product.
Levee Elements	This activity includes creation of the Levee Elements dataset depicting locations of drainage and protective features for levee study areas identified in this SOP. This standard enhanced is to be included and delivered within the Flood Risk Database product.
Levee Rating Curve	This activity includes the creation of Rating Curve data for specific locations along levee study areas identified in this SOP. This enhanced dataset is to be included and delivered within the Flood Risk Database product.
Critical Facility (Levee)	This activity includes creation of the Critical Facility dataset included within the levee study areas identified in this SOP. This enhanced dataset is to be included and delivered within the Flood Risk Database product.
Flood Risk Assessment Results – Levee (User Defined Analysis or Census Block)	This activity includes the creation of the Flood Risk Assessment Results at a census block level for levee areas receiving updated flood study information. This standard dataset is to be included and delivered within the Flood Risk Database product.

Dam Specific Flood Risk Datasets

	Description
Risk MAP Dam Locations	This activity includes the creation of Dam Location data for areas receiving updated flood study information. This enhanced dataset can be included and delivered within the Flood Risk Database product.
Dam Cross Sections	This activity includes the creation of Dam Cross Sections to support dam failure or other inundation analyses for locations within the watershed or project area. This enhanced dataset can be included and delivered within the Flood Risk Database product.
Dams Cross Section Model Results	This activity includes the creation of Dam Cross Section Model Results as derived from dam failure or other inundation analyses for locations within the watershed or project area. This enhanced dataset can be included and delivered within the Flood Risk Database product.
Dams Scenario Lookup Table	This activity includes the creation of the Dams Scenario Lookup Table for locations within the watershed or project area. This enhanced dataset can be included and delivered within the Flood Risk Database product.
Upstream Inundation Areas	This activity includes the creation of spatial extents of upstream inundation area associated with the inundation study of the dam(s) within the watershed or project area. This enhanced dataset can be included and delivered within the Flood Risk Database product.
Downstream Inundation Areas	This activity includes the creation of Downstream Inundation Areas as derived from dam failure or other inundation analyses for locations within the watershed or project area. This enhanced dataset can be included and delivered within the Flood Risk Database product.
Easements	This activity includes the creation of Easements data (e.g., existing or recommended) as derived from dam failure or other inundation analyses for locations within the watershed or project area. This enhanced dataset can be included and delivered within the Flood Risk Database product.
Risk Assessment Results (Dams)	This activity includes the creation of the Risk Assessment Results - Dams based results for areas receiving updated flood study information. This enhanced dataset can be included and delivered within the Flood Risk Database product.

Natural Risk Datasets

The Natural Risk Datasets provide communities with additional information about natural hazard risks. These datasets are prepared by the contractor to support local community understanding related to other natural disaster risks (such as Earthquake, Tsunami, Wildfire, Debris Flow, etc.). These products and their associated standard (and enhanced) datasets are non-regulatory and intended to support local risk awareness and mitigation.

	Description
Earthquake Risk Dataset (Region to add specific needs to describe the dataset needs)	EQ can be provided based on Hazus input and results. FEMA 366 already provides a template on a national level for AAL.
Wildfire Burn Scars (Region to add specific needs to describe the dataset needs)	
Tsunami Inundation Dataset (Region to add specific needs to describe the dataset needs)	Hazus input/output can help with tsunami. Inputs defined based on flow depths and velocities for hazard data and Hazus results at the Census Block level similar to the flood risk products.
Post Wildfire Flood Extents (Region to add specific needs to describe the dataset needs)	
Debris Flow Dataset (Region to add specific needs to describe the dataset needs)	
Other Natural Risk Dataset (Region to add specific needs to describe the dataset needs)	

RISK MAP LIFECYCLE

Each step of the Flood Risk Project lifecycle produces a distinct set of products and tools related to natural hazard risk. Technical assistance can help community officials apply these products and tools to assess, communicate, and mitigate natural hazard risk.

This section focuses on opportunities for formal technical assistance activities. It is organized according to the six steps of the Risk MAP Flood Risk Project life cycle. For each step, this section identifies the touchpoints, products, and tools that help to build technical assistance activities. This section also identifies the phases of hazard mitigation planning that can benefit from MPTA.

EACH OF THE FOLLOWING PAGES GIVES EXAMPLES OF MPTA THAT COULD BE APPROPRIATE FOR EACH PHASE OF THE RISK MAP LIFECYCLE. THESE ACTIVITIES AREN'T LIMITED TO THOSE PHASES, AND THE EXAMPLES ARE NOT MEANT TO BE EXHAUSTIVE.

RISK MAP: PROJECT PLANNING AND DISCOVERY

Risk MAP Project Teams engaged in the Project Planning step can build MPTA into the Discovery process. Technical assistance can also support the Hazard Mitigation Planning cycle.

Watershed Stakeholder Coordination

	Description
Area Prioritization	Help local officials use Discovery products to prioritize areas for further study (e.g., flood risk may be poorly known in areas with dated risk assessments or areas that have experienced significant changes in land use).
Data and Analysis Needs Assessment	Help communities use Discovery products to define the data and analysis needs for mitigation planning.
Communication and Engagement	Develop multi-hazard outreach materials and risk assessments.
Risk Assessment Enhancement	Help local agencies and officials use the Discovery Map and Report to enhance risk assessments.
Mitigation Action Tracking and Verification	Help local agencies and officials use the Discovery products to track progress on previously identified mitigation actions and assess changing risks and priorities.
Capacity Building	Technical assistance to enhance the capabilities of local officials, planners, and GIS staff.
Equity Integration	Help integrating equity considerations.
Future Conditions Integration	Help integrating future conditions (trends in climate, demographics and land use) into product use considerations.

Organize Resources Phase

	Description
Use of Discovery Products	Help community officials use the Risk MAP Discovery products to prioritize areas for further study, especially in underserved communities. For example, flood risk may be poorly identified or communicated in areas with outdated risk assessments or areas that have experienced significant changes in land use. The Risk MAP Discovery Map and Report should include data that can help communities identify these poorly characterized areas, such as data on mapping needs, population projections, land use trends as well as data and analysis from other tools that help to identify vulnerable populations at risk from future hazard events. Project Teams can help communities use these products to define the data and analysis needs for mitigation planning.
Non-Flood Hazards	Identify technical assistance needs for hazards other than flooding. In Bannock County, Idaho, for example, the Discovery process led to requests for multi-hazard outreach materials and risk assessments. Community stakeholders requested more information on the risk of avalanche, drought, earthquake, landslide, liquefaction, rail lines and hazardous cargo, severe storms, and wildfires. By discussing community priorities during the Discovery process, Project Teams can position the Flood Risk Project to address the project area's most pressing needs.

Assess Risks Phase

	Description
Use of Discovery Map and Report	Project Teams can help community agencies and officials use the Risk MAP Discovery Map and Report to enhance risk assessments. These Discovery products can help locate the areas that are likely to be affected by different hazards, and identify the people, property, and assets that are likely to be most vulnerable to these hazards.

Implement Plan and Monitor Progress

	Description
Tracking Mitigation Progress	Project Teams can help community agencies and officials use Risk MAP Discovery products to track progress on previously identified mitigation actions and assess changing risks and priorities. To help communities track progress, Project Teams can request information on mitigation successes and challenges in Discovery questionnaires, or build discussion of mitigation priorities and needs into Discovery meetings.
Use of Discovery Map and Report	To help communities assess changing risks and priorities, Project Teams can help community officials utilize the data compiled in the Risk MAP Discovery Map and Discovery Report.

RISK MAP: MAPPING AND DATA DEVELOPMENT

Risk MAP Project Teams engaged in the Mapping and Data Development step can build MPTA activities into the Flood Risk Review meeting. Technical assistance activities can support the Assess Risks phase or the Mitigation Planning phase.

Mapping Phase

	Description
Risk and Priority Assessment	Help communities develop more robust assessments of risks and priorities (e.g., identify any overlap between flood-prone areas and areas targeted for future development in the comprehensive plan, climate, and future conditions).
Integrate with Local Data	Technical assistance to help communities combine the digital data in the draft FRD with local datasets to increase understanding of flood risk, identify areas of vulnerability, and prioritize mitigation actions.
Ordinance Support	Help communities update their future land use map and zoning ordinances to modify development in flood-prone areas to reduce risks and vulnerabilities, if significant overlap is identified.
Identify and Support Underserved Areas	Technical assistance can help identify underserved areas of the community in need of flood risk outreach and help develop outreach tools. For example, Project Teams can help communities use the data in the draft FIRM to identify residential, commercial, and industrial structures or access points to critical assets and lifelines located in flood-prone areas. Project Teams can then work with community officials to develop outreach messages and materials that are tailored to the residents, business owners, and tenants in these areas.
Capacity Building	Technical assistance to improve the capabilities of local officials, planners, and GIS staff.

RISK MAP: PRELIMINARY FIRM ISSUANCE

Risk MAP Project Teams engaged in the Preliminary FIRM Issuance step can build MPTA into both the CCO Meeting and the Flood Risk Open House. Regardless of a community's mitigation planning timeline, technical assistance activities can support public outreach.

CCO and Open House Meetings

	Description
Develop Outreach Tools	Identify areas of the community in need of flood risk outreach and help develop outreach tools (e.g., use the data in the draft FIRM to identify residential, commercial, and industrial structures located in flood-prone areas).
Support Local Official Communication	Help local officials communicate with attendees about what the new floodplain boundaries mean for them, and how they can access resources to identify and implement mitigation measures.
Support Targeted Outreach	Help local officials use the preliminary FIRM and draft FRD to improve outreach, such as targeting meeting invitations to the properties most likely to be affected by updated floodplain maps.
Visually Communicate Flood Risk	Use flood risk products to visually communicate flood risks to the public and/or enlist support for possible mitigation actions.

RISK MAP: RISK ASSESSMENT

FEMA

The Risk Assessment step of the flood risk project life cycle focuses on developing comprehensive natural hazard information for the project area. It includes non-regulatory flood risk products (FRPs) and information on multi-hazard risks. This subsection focuses on FRPs. With appropriate technical assistance, communities can use the wealth of information embedded in the FRPs to better assess, communicate, and mitigate risk. Technical assistance activities can be integrated into the CCO Meeting and the Resilience Meeting.

Flood Risk Products

The Flood Risk Database (FRD) is a required FRP when new flood hazard analysis is conducted. The Flood Risk Map (FRM) and Flood Risk Report (FRR) are optional FRPs. Each product provides the flood risk information generated by a Flood Risk Project in a different format. The FRD gives comprehensive flood risk information in GIS format; the FRM gives key flood risk information in a visual format; and the FRR summarizes flood risk information in a narrative format. The Flood Risk Report may also include risk information for hazards other than flooding, such as earthquakes, tsunamis, and wildfires. This information may include qualitative information on past occurrences as well as quantitative information on potential losses as estimated by Hazus. Technical assistance should fit the capabilities of the communities in a Flood Risk Project area.

	Description
Flood Risk Products	For communities that have limited GIS capabilities, Project Teams can provide technical assistance to help communities visualize flood risk to enhance outreach and communication and to improve risk assessments.
Changes Since Last FIRM (CLSF)	Technical assistance related to the CSLF dataset can help communities: ▪ Update areas at risk in flood zones. ▪ Determine where flood mitigation may be needed. ▪ Inform development decisions, land use and transportation planning. ▪ Update evacuation plans. ▪ Communicate changes in flood risk and mitigation priorities to homeowners and other property owners as well as tenants, especially in underserved areas.
Flood Depth and Analysis Grids	Technical assistance related to the Flood Depth and Analysis Grid dataset can help communities: ▪ Integrate flood risk data with more detailed data on structures, businesses, residents, lifelines, and other assets to prioritize mitigation actions based on risk. ▪ Couple flood risk data with local data on transportation facilities to develop evacuation plans and prepare for road closures. ▪ Communicate flood risk to elected officials and key leaders to enlist support for possible mitigation actions. ▪ Integrate flood risk information into community development and permitting decisions. ▪ Provide data to help screen for cost-effectiveness of potential mitigation actions.
Flood Risk Assessment Dataset	Technical assistance related to the Flood Risk Assessment dataset can help communities: ▪ Quantify potential future flood losses to existing structures. ▪ Identify areas where mitigation activities may produce the greatest return on investment. ▪ Identify areas requiring higher building code requirements or use of flood-resilient designs and construction materials. ▪ Provide data for Loss Avoidance Studies.
Areas of Mitigation Interest (AoMI)	Technical assistance related to the AoMI dataset can help communities: ▪ Prioritize mitigation actions. ▪ Identify and prioritize capital improvement projects. ▪ Visually communicate flood risks to the public. ▪ Promote watershed-scale approaches to hazard mitigation.

RISK MAP: EFFECTIVE ISSUANCE

Given that the products published during the Effective Issuance step represent the final version of preliminary products, most of the technical assistance activities described in the earlier steps also apply to the Effective Issuance step. However, two touchpoints can also be introduced into the Effective Issuance step that provide additional opportunities for mitigation planning technical assistance.

Before FIRM Effective Date

Before the FIRM effective date, Project Teams can organize discussions with local officials on the adoption of local floodplain ordinances that meet or exceed minimum NFIP and state standards.

	Description
Higher Regulatory Standards	Project Teams can help communities update their floodplain management ordinances to include higher standards. Adopting higher floodplain management standards is one of the most effective flood hazard mitigation techniques communities can implement, and can advance mitigation planning in any phase of the hazard mitigation planning cycle. Higher floodplain management standards can include freeboard requirements for residential construction, prohibiting development in the floodway, incorporating a flood-protected setback, incorporating a community-identified Special Flood Hazard Area (SFHA), requiring a Non-Conversion Agreement, requiring a Certificate of Compliance, placing restrictions on hazardous materials storage, and lowering substantial damage ratios.

Resilience Meeting

Before or after the effective date, the optional Resilience Meeting represents an opportunity for a second touchpoint. The goal of the Resilience Meeting is to build local capacity for implementing priority mitigation actions within the study area. Depending on the needs and interests of watershed stakeholders, the Project Team may structure the meeting to emphasize flood risk, strategies for reducing flood risk, resources available to help implement mitigation strategies, and/or strategies for effectively communicating with constituents.

Flood Risk	For meetings emphasizing flood risk, technical assistance related to the FRPs may be appropriate.
Strategies for Reducing Flood Risk	For meetings emphasizing mitigation strategies, technical assistance addressing funding opportunities or best practices for floodplain management may be most appropriate. Relevant funding opportunities include FEMA's HMA programs and FEMA's Public Assistance grant program. Relevant best practices include those encouraged by the NFIP's Community Rating System. This program recognizes 19 floodplain management activities that exceed minimum NFIP standards in four categories: public information, mapping and regulation, flood damage reduction, and warning and response. Communities that engage in these activities not only improve community resilience, but can earn their residents discounted flood insurance premiums as well.
Resources for Implementation of Flood Risk Strategies	During the Resilience Meeting, technical assistance related to the enforcement of floodplain management ordinances or the implementation of watershed-scale approaches may also be appropriate. For example, Flood Risk Project Teams could provide examples of local or regional success stories to build watershed-scale collaboration. Community examples are more likely to generate buy-in and promote implementation in neighboring jurisdictions, and the combined actions of neighboring communities will have a greater impact on resiliency.
Communication Strategies	For meetings emphasizing communication with stakeholders, technical assistance related to flood risk visualization and effective messaging may be most appropriate.

Planning for mitigation action is an ongoing activity that should occur in each step of the Risk MAP life cycle. While the previous sections looked at MPTA through the lens of the Risk MAP life cycle, this section looks at how MPTA can be provided during the hazard mitigation planning cycle. The status of mitigation planning will determine which activities will be most effective.

Understanding a community's mitigation plan status is important, as an approved mitigation plan is one condition of eligibility for a number of grant opportunities. Grants are often vital for the funding and completion of mitigation projects. Although the Risk MAP Flood Risk Project may not align with the five-year hazard mitigation planning update, new information can be included in the next plan update. Other community plans, codes, and ordinances could also incorporate this new information as a way of integrating mitigation into other community processes. This can increase resilience to future hazard events. It is important for the Risk MAP Project Team to provide technical assistance to communities to analyze the new flood risk data.

Project Teams can get information on mitigation plan status through the FEMA Mitigation Planning Portal (MPP) or through the FEMA Hazard Mitigation Plan Status web map. The MPP is the system for tracking FEMA-approved mitigation plans. It lists communities with a FEMA-approved plan that has also been formally adopted by the jurisdiction. A password is required for the MPP, but not for the Hazard Mitigation Status web map.

Stakeholder Engagement

Engaging with state and local stakeholders in hazard mitigation planning is key for MPTA to be effective (See FEMA Guidance for Stakeholder Engagement). State and local groups with a stake in hazard mitigation planning include the state NFIP Coordinator, state or tribal mitigation officers or planners, and members of the steering committees involved in previous hazard mitigation plans. Local groups that represent and speak for underserved and disadvantaged communities should be included to account for a broader range of needs and engagement methods. Project Teams can reach out through the hazard mitigation planning process to help remove barriers that may have limited a community's ability to prepare for, weather and recover from disaster events. Working alongside communities to tailor solutions that respond to their unique needs will advance inclusive community engagement practices that lead to equitable outcomes.

	Description
Establish Partnerships with State Silver Jackets Teams	Many of the relevant federal and state stakeholders can be engaged through a state's Silver Jackets team. General information about the US Army Corps of Engineers Silver Jackets program is available at https://silverjackets.nfrmp.us/. These state-led teams bring together federal and state agencies with mission areas in hazard mitigation, emergency management, and floodplain management to reduce flood risk. The collective resources of the participating agencies can help Project Teams develop and deliver targeted technical assistance to communities in the project area.
Establish Partnerships with local Hazard Mitigation Planning Steering Committee	Many of the relevant local stakeholders can be engaged through local hazard mitigation planning steering committees. Key local stakeholders include GIS specialists, planning staff, public works staff, and the permitting and enforcement staff. Involving multiple departments brings unique experiences and perspectives to the table, and allows the lessons, data, and relationships developed through a Flood Risk Project to be integrated into a range of community processes and operations. For example, information on natural hazard risk can inform comprehensive planning, capital improvement planning, building and site development, zoning ordinance amendments, and emergency management plans.

Risk Assessment Phase

	Description
Risk Assessment Phase	For communities in the Assess Risks phase of mitigation planning, Project Teams can assist community agencies and officials in using the Risk MAP Discovery Map and Report to enhance risk assessments. These Discovery products can help locate the areas that are likely to be affected by different hazards, and identify the people, property, and assets that are likely to be most vulnerable to these hazards.
Non-Flood Hazards	The Discovery process is also an opportunity to identify technical assistance needs for hazards other than flooding. In Bannock County, Idaho, for example, the Discovery process led to requests for multi-hazard outreach materials and risk assessments. Community stakeholders requested more information on the risk of avalanche, drought, earthquake, landslide, liquefaction, rail lines and hazardous cargo, severe storms, and wildfires. By discussing community priorities during the Discovery process, Project Teams can position the Flood Risk Project to address the project area's most pressing needs.

Develop Mitigation Strategy Phase

	Description
Develop Mitigation Strategy	To help prioritize mitigation actions, Project Teams can assist state and community agencies in using preliminary and draft products to assess relative risks and vulnerability to community members, businesses as well as other assets, such as lifelines. For example, Project Teams can help communities use the data in the FIRM Database to identify the areas with the highest concentrations of renter or owner occupied flood-prone structures, or the critical facilities and lifelines most vulnerable to flooding.
BCA Support	Technical assistance can also assist agencies in conducting comprehensive cost-benefit analyses for proposed mitigation projects. Communities often struggle to quantify the long-term social, economic, and environmental benefits of proposed mitigation investments. Nature-based solutions / green infrastructure, for example, provides many environmental and public health benefits that may be difficult to translate into dollars and cents. By developing a methodology to quantify the multiple benefits of proposed mitigation actions, Project Teams can help communities more effectively allocate limited resources.

Monitoring and Maintenance Phase

	Description
HMP Monitoring and Maintenance	For communities in the Implement the Plan and Monitor Progress phase, Project Teams can assist community agencies and officials in using Risk MAP Discovery products to track progress on previously identified mitigation actions and assess changing risks and priorities. To help communities track progress, Project Teams can request information on mitigation successes and challenges in Discovery questionnaires, or build discussion of mitigation priorities and needs into Discovery meetings. To help communities assess changing risks and priorities, Project Teams can help community officials utilize the data compiled in the Risk MAP Discovery Map and Discovery Report.
Plan Updates	Project Teams can assist local officials in using the preliminary FIRM and FIS report to update or validate their risk assessment or enhance their plan maintenance process.

RISK MAP: DUE PROCESS

Develop and deliver due process products and conduct due process activities for the study area as specified in this SOP. Activities and products include the development, submittal, and resolution of comments as well as pertinent Quality Reviews. Activities also include the obtaining FEMA approval for Key Decision Point 4 (KDP4) as well as the completion of MIP tasks as appropriate for deliverable submittals.

Due Process

	Description
Communication and Engagement	Technical assistance to help local officials use the preliminary FIRM and draft FRD to target meeting invitations to the properties most likely to be affected by updated floodplain maps.
Mitigation Planning Support	Technical assistance to help local officials communicate with attendees about what the new floodplain boundaries mean for them, and how they can access resources to identify and implement mitigation measures.
Mitigation Action Prioritization	Help local officials prioritize mitigation actions and develop targeted outreach (e.g., using Flood Depth and Analysis Grid dataset).
Risk Assessments	Assist local officials in using the preliminary FIRM and FIS report to assess changing risks and priorities.
Relative Risk and Vulnerability Assessment	Assist local agencies in using preliminary and draft products to assess relative risks and vulnerability.
Risk Assessments	Assist local officials in using the preliminary FIRM and FIS report to update or validate their risk assessment or enhance their plan maintenance process.
BCA Support	Assist local agencies in conducting comprehensive cost-benefit analyses for proposed mitigation projects.
Benefits Quantification	Technical assistance to quantify the long-term social, economic, and environmental benefits of proposed infrastructure investments.
Capacity Building	Technical assistance to enhance the capabilities of local officials, planners, and GIS staff.
Higher Regulatory Standards	Technical assistance to communities in updating their floodplain management ordinances to include higher standards.
Ordinance Enforcement	Technical assistance related to the enforcement of floodplain management ordinances or the implementation of watershed-scale approaches.