PENNSYLVANIA HAZARD MITIGATION PLAN STANDARD OPERATING GUIDE

2020

pennsylvania
EMERGENCY MANAGEMENT AGENCY

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INTERNATIONAL

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County Hazard Mitigation Plan (HMP) Update Suggested Schedule

	Task	Description	Complete	SOG Section
3 YEARS BEFORE PLAN EXPIRES	**Apply for Hazard Mitigation Assistance**	Call for assistance. The most likely source of funding is Hazard Mitigation Assistance (HMA) grants. The grant applications are submitted through PEMA via the 'E-grants' system. The process normally takes 12 months from application to funding award.	36 months before HMP expiration	10
	Build the Planning Team	Review the existing HMP to gather former Planning Team participant information. Contact Planning Team members and other stakeholders as needed, in writing, to re-establish the Planning Team. Consider expanding the Planning Team and include all potential stakeholders, every organization that has assets in your county, passes through your county or could be affected by hazards in your county. Invite lots of people, you are not responsible if they don't participate, but are responsible for inviting them. Document the invitation process and the responses.	More than 24 months before HMP expiration	2
	Obtain existing FEMA Local Mitigation Plan Review Tool	The existing FEMA Local Plan Review Tool will have comments and suggested or required improvements associated with the current hazard mitigation plan. A copy of the existing review tool can be obtained from FEMA.	More than 24 months before HMP expiration	1, 8
	Hold Steering Committee Meetings	The Steering Committee is the smaller group of individuals (typically 2-5 members) that drive the planning process and 'plan to plan'. The Steering Committee will organize and conduct Planning Team and Public meetings and dictate the HMP update schedule. The Steering Committee should meet regularly (in-person and/or virtually) throughout the HMP update process.	More than 24 months before HMP expiration	2
2 YEARS BEFORE PLAN EXPIRES	**Hold Initial Public Kickoff Meeting***	Hold a Kickoff Meeting with the Planning Team and the Public to inform them about HMP update. Gather information to inform Risk Assessment and Capability Assessment.	24 months before HMP expiration	2, 4, 5
	Review Existing Planning Mechanisms**	Review applicable planning documents, studies, reports and technical information that may exist that would enhance the plan update and should be considered for incorporation into your plan. Examples are the county comprehensive plan, economic development plan and floodplain management ordinances.	24- 20 months before HMP expiration	2, 5
	Update Community Profile	Summarize community characteristics including geography, demographics, and environmental features of a county and the jurisdictions.	20 months before HMP expiration	3

	Task	Description	Complete	SOG Section
2 YEARS BEFORE PLAN EXPIRES (CONTINUED)	**Profile Hazards****	Continue collecting data and determine the location and extent, the range of magnitude, past occurrence and probability of future occurrence for each hazard.	20 - 18 months before HMP expiration	4.2
	Assess Vulnerability**	Continue collecting data and, using hazard profiles, summarize vulnerable assets (i.e. people, structures, critical facilities, infrastructure), estimate losses and develop a risk factor for each hazard.	18 months before HMP expiration	4.3
	Complete Risk Assessment	Consolidate information from the Risk Assessment input from Steering Committee and Public Kick-off Meetings, the hazard profiles and the vulnerability assessments and draft the Risk Assessment section of the plan.	18 months before HMP expiration	4
	Hold Public Risk Assessment Review Meeting*	Hold a Risk Assessment Review Meeting with the Planning Team and the Public to review risk assessment findings.	18 months before HMP expiration	2, 4
	Complete Capability Assessment	Consolidate information from the Capability Assessment input from Steering Committee and Public Kick-off Meetings, existing planning mechanisms review, and other data collection to draft the Capability Assessment section of the plan.	18 - 12 months before HMP expiration	2, 5
3-12 MONTHS BEFORE PLAN EXPIRES	**Hold Mitigation Solutions Workshop***	Hold a Mitigation Solutions Workshop with the Planning Team to evaluate and update existing goals, objectives and actions. Each participating jurisdiction must have at least one mitigation action. Collect input to inform the Plan Maintenance Section.	12 months before HMP expiration	2, 6
	Complete Mitigation Action Plan	Document information obtained from the Mitigation Solutions Workshop and update the Mitigation Action Plan.	12 - 9 months before HMP expiration	6.4
	Complete Plan Maintenance Section**	Document any information obtained from the Steering Committee and update the Plan Maintenance section of the plan.	9 months before HMP expiration	7
	Complete Draft HMP	Consolidate and review all sections of the plan. Prepare a draft document.	9 - 6 months before HMP expiration	All
	Hold Public Draft Plan Review Meeting*	Hold a Meeting with the Planning Team and Public to review the draft plan.	6 months before HMP expiration	2
	Provide a Public Review and Comment Period	Make the Draft HMP available for public review and comment for a minimum of 30 days. Post the Draft HMP on a project or county website and provided place printed copies at the county, public library, etc.	6 months before HMP expiration	2

	Task	Description	Complete	SOG Section
	Complete Final HMP	Make all necessary revisions based on Planning Team and public comment and feedback and prepare the final product for submission.	6 - 3 months before HMP expiration	All
FINAL 3 MONTHS	**Submit Final HMP to PEMA**	Submit the final plan to the State Hazard Mitigation Officer who will review, return for edits (if needed), approve, and then forward to FEMA for review.	At Least 90 days before HMP expiration	9
	Receive FEMA "Approval Pending Adoption" notice	FEMA may request additional information and documentation. Once FEMA determines the HMP satisfies all requirements, you will receive a letter stating that the plan has been Approved Pending Adoption (APA).	Before HMP expiration	9
	Adopt FEMA-approved plan	Once APA has been received, each participating jurisdiction and the county must adopt the plan. Follow local guidelines and requirements for public notice associated with adoption resolution.	Before HMP expiration	9

** Three to four community and stakeholder meetings are the minimum requirement for HMP update. The Draft Plan Review Meeting should be advertised in the local newspaper a minimum of 7 days prior to the meeting date. Counties and municipalities should conduct virtual outreach by posting the planning process on their website to encourage wider participation.*

*** Data collection should be continuous – don't wait for the next HMP update! Posting the HMP with a corresponding comment mechanism or form on the county website will encourage stakeholders to provide data and feedback continuously.*

Hazard Mitigation Planning Checklist

STEPS AND CORRESPONDING PRODUCTS	COMPLETE
PLANNING PROCESS	
Step 1: Build the Planning Team.	
1) List of participants and roles.	
2) Description of each jurisdiction's participation.	
3) Discussion of past participation in the previously adopted plan.	
Step 2: Gather Tools.	
1) Inventory of existing HMP planning documentation.	
Step 3: Create a Workspace.	
1) Designate physical and virtual workspace.	
Step 4: Engage the Public and Other Stakeholders.	
1) A description of all meetings and forums.	
2) A description of stakeholder involvement (neighboring communities, agencies).	
3) A description of tools (worksheets and surveys) distributed to meeting and forum participants.	
4) A compilation of meeting and outreach materials.	
5) Documentation of public notice(s) and comments received.	
Step 5: Sustain Outreach Activities During the Planning Process.	
1) An HMP update and outreach schedule.	
Step 6: Document the Approach to Updating Each Section of the Plan.	
1) Description of the process followed to prepare the HMP update and any changes that occurred.	
2) A table summarizing changes to previously adopted plan.	
COMMUNITY PROFILE	
Step 1: Describe Geography and the Environment.	
1) Description of the county's geographical location, land area, and water features.	
2) A base map for the county.	
Step 2: Describe Community; Include Relevant Facts.	
1) Description of the county and its jurisdictions that includes history, major industries, primary land uses, etc.	
2) Identify the location of known historic and cultural resources within the community that are vulnerable to natural hazards and identify areas that may need additional inventory.	
Step 3: Summarize Demographics.	
1) Demographic summary including population, population density, racial composition, age breakdown, income, etc.	
2) Population table listing each municipality.	
Step 4: Describe Growth Trends and Land Use.	
1) Summary of growth trends, including population growth, changing land use, and the overall extent of developed area, including how they have increased the community's vulnerability or resiliency to hazards.	

STEPS AND CORRESPONDING PRODUCTS	COMPLETE
2) A map of existing land use for the county.	
Step 5: Describe Data Sources and Limitations.	
1) Describe/discuss sources used to complete the plan update and any data limitations encountered, as well as opportunities for continued data gathering, updating, and coordination.	
RISK ASSESSMENT	
Identifying Hazards	
Step 1: Document Past Presidential Disaster Declarations.	
1) A table of past, applicable presidential disaster declarations.	
Step 2: Develop a List of Natural and Human-made Hazards.	
1) Comprehensive, descriptive list of all natural and human-made hazards profiled in the plan update.	
Profiling Hazards	
Step 1: Identify the Geographic Location.	
1) Map with summary illustrating the location or geographical extent of each hazard.	
Step 2: Define the Magnitude.	
1) Summary of the potential hazard magnitude or severity.	
Step 3: Profile Past Occurrences.	
1) Discussion of past hazard occurrences that includes the date(s), severity, loss, and event duration.	
Step 4: Summarize Repetitive Loss Properties (Flood Hazard Only).	
1) Table Summarizing number and structure type of RL and SRL properties in each community.	
Step 5: Establish Probability of Future Occurrence.	
1) Assessment of future hazard probability.	
Step 6: Determine Environmental Impacts.	
1) List or discussion of potential environmental impacts from hazards.	
Assessing Vulnerability	
Step 1: Identify and Summarize Vulnerable Assets.	
1) Table of critical facilities by municipality and corresponding hazard area overlap.	
2) Overall summary of vulnerability to each hazard, documenting the impact of each hazard, including vulnerability of historic and cultural resources, such as important cultural institutions.	
3) Flood vulnerability maps for each jurisdiction (Flood Hazard only).	
4) Summary of vulnerability for repetitive loss properties (Flood Hazard only).	
5) Document process used to identify and continually update existing vulnerable assets, including historic and cultural resources.	
Step 2: Estimate Loss.	
1) Estimate of potential dollar losses to vulnerable assets.	
2) Description of methodology used to prepare dollar loss estimates.	
Step 3: Characterize Repetitive Loss Properties (Flood Only).	
1) Estimate of dollar losses to repetitive loss properties.	

STEPS AND CORRESPONDING PRODUCTS	COMPLETE
2) Description of land use and development within repetitive loss areas.	
Step 4: Develop Risk Factor for Profiled Hazards.	
1) Table showing Risk Factors and hazard rankings.	
2) Description of risk factor methodology.	
3) Table depicting jurisdictional hazard risk.	
Step 5: Describe Asset Vulnerability of Future Development.	
1) Description of how future land uses and development trends are expected to impact vulnerability.	
CAPABILITY ASSESSMENT	
Step 1: Complete the Capability Assessment Survey.	
1) Completed Capability Assessment Survey for each participating jurisdiction and the county.	
Step 2: Compile and Analyze Information from the Capability Assessment.	
1) Complete capability inventory including a table of planning tools.	
2) Descriptions of all local capabilities and existing limitations.	
3) Completed Self-Assessment Capability Matrix.	
Step 3: Determine Participation in the National Flood Insurance Program (NFIP).	
1) Completed NFIP Checklist(s).	
2) Description of the level of participation and NFIP compliance.	
Step 4: Describe integration with existing planning mechanisms.	
1) Summary of how the hazard mitigation has been or will be integrated into existing plans and programs and how other planning mechanisms have been incorporated into the hazard mitigation plan.	
MITIGATION STRATEGY	
Evaluating Existing Hazard Mitigation Goals, Objectives, and Action Plan	
Step 1: Review the Existing Mitigation Plan Goals and Objectives.	
1) Summary table of information collected from the Goal and Objective Review Worksheet.	
2) Compilation of Goal and Objective Review Worksheets.	
Step 2: Review the Existing Mitigation Action Plan.	
1) Summary table of information collected from the Mitigation Action Plan Review Worksheet.	
2) Compilation of Mitigation Action Plan Review Worksheets.	
Updating Mitigation Goals and Objectives	
Step 1: Review Key Items.	
1) A narrative of the evaluation of the updated risk and capability assessments and existing goals and objectives.	
Step 2: Develop Mitigation Goals and Objectives.	
1) List of updated mitigation goals and objectives with applicable public participation documentation.	
Step 3: Include Goals and Objectives Related to NFIP Requirements.	
1) List of goals and objectives related to continued NFIP compliance.	

STEPS AND CORRESPONDING PRODUCTS	COMPLETE
Evaluating Mitigation Techniques for Profiled Hazards	
Step 1: Review the Four Categories of Mitigation Techniques.	
Step 2: Complete the Mitigation Technique Matrix.	
1) Matrix of hazards and corresponding mitigation techniques.	
Developing the Mitigation Action Plan	
Step 1: Brainstorm Possible Mitigation Actions.	
1) Description of how mitigation actions were selected.	
Step 2: Include NFIP-Related Mitigation Actions.	
1) List of NFIP mitigation actions related to continuing compliance with NFIP regulations.	
Step 3: Evaluate and Prioritize Mitigation Actions.	
1) Description of the processes followed to evaluate and prioritize mitigation actions, including consideration of whether certain mitigation techniques are more or less appropriate for historic buildings and other local resources that are uniquely important.	
2) Mitigation Action Evaluation table.	
Step 4: Develop Mitigation Action Plans for Each Participating Jurisdiction.	
1) Mitigation action plan which includes actions for each participating jurisdiction.	
PLAN MAINTENANCE	
Step 1: Update the Process for Monitoring, Evaluating, and Updating the HMP.	
1) A description of the methodology to maintain plan over five-year cycle.	
2) Tables documenting annual meetings held by the planning team and any changes made to the plan (between updates).	
Step 2: Describe Continued Public Participation.	
1) Description of how public participation will be maintained over the next five years.	
INTRODUCTION	
Step 1: Complete Background Information.	
1) Background section with information on hazard mitigation planning and preparation.	
Step 2: Develop Purpose.	
1) Description of purpose for hazard mitigation plan development.	
Step 3: Prepare Scope.	
1) Description of the scope for the plan.	
Step 4: Document Authority and References.	
1) List of federal, state and local authorities and references.	
PLAN ADOPTION	
Step 1: Submit Updated Hazard Mitigation Plan.	
1) A complete, updated plan submitted to PEMA's State Hazard Mitigation Officer.	
2) A completed Local Mitigation Plan Review Tool.	
Step 2: Submit Documentation of Formal Adoption.	
1) Documentation on resolution of formal adoption by all participating jurisdictions.	

LOCAL MITIGATION PLAN REVIEW TOOL 2020

The *Local Mitigation Plan Review Tool* demonstrates how the Local Mitigation Plan meets the regulation in 44 CFR §201.6 and offers States and FEMA Mitigation Planners an opportunity to provide feedback to the community.

- The Regulation Checklist provides a summary of FEMA's evaluation of whether the Plan has addressed all requirements.
- The Plan Assessment identifies the plan's strengths as well as documents areas for future improvement.
- The Multi-jurisdiction Summary Sheet is an optional worksheet that can be used to document how each jurisdiction met the requirements of each Element of the Plan (Planning Process; Hazard Identification and Risk Assessment; Mitigation Strategy; Plan Review, Evaluation, and Implementation; and Plan Adoption).

The FEMA Mitigation Planner must reference this *Local Mitigation Plan Review Guide* when completing the *Local Mitigation Plan Review Tool*.

Jurisdiction:	**Title of Plan:**	**Date of Plan:**
Local Point of Contact:		**Address:**
Title:		
Agency:		
Phone Number:		**E-Mail:**

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**
Date Received in FEMA Region ***(insert #)***		
Plan Not Approved		
Plan Approvable Pending Adoption		
Plan Approved		

SECTION 1:
REGULATION CHECKLIST

INSTRUCTIONS: The Regulation Checklist must be completed by FEMA. The purpose of the Checklist is to identify the location of relevant or applicable content in the Plan by Element/sub-element and to determine if each requirement has been 'Met' or 'Not Met.' The 'Required Revisions' summary at the bottom of each Element must be completed by FEMA to provide a clear explanation of the revisions that are required for plan approval. Required revisions must be explained for each plan sub-element that is 'Not Met.' Sub-elements should be referenced in each summary by using the appropriate numbers (A1, B3, etc.), where applicable. Requirements for each Element and sub-element are described in detail in this *Plan Review Guide* in Section 4, Regulation Checklist.

1. REGULATION CHECKLIST **Regulation** (44 CFR 201.6 Local Mitigation Plans)	**Location in Plan (section and/or page number)**	**Met**	**Not Met**
ELEMENT A. PLANNING PROCESS			
A1. Does the Plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? (Requirement §201.6(c)(1))			
A2. Does the Plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, agencies that have the authority to regulate development as well as other interests to be involved in the planning process? (Requirement §201.6(b)(2))			
A3. Does the Plan document how the public was involved in the planning process during the drafting stage? (Requirement §201.6(b)(1))			
A4. Does the Plan describe the review and incorporation of existing plans, studies, reports, and technical information? (Requirement §201.6(b)(3))			
A5. Is there discussion of how the community(ies) will continue public participation in the plan maintenance process? (Requirement §201.6(c)(4)(iii))			
A6. Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a 5-year cycle)? (Requirement §201.6(c)(4)(i))			
ELEMENT A: REQUIRED REVISIONS			
ELEMENT B. HAZARD IDENTIFICATION AND RISK ASSESSMENT			

1. REGULATION CHECKLIST **Regulation** (44 CFR 201.6 Local Mitigation Plans)	Location in Plan (section and/or page number)	Met	Not Met
B1. Does the Plan include a description of the type, location, and extent of all natural hazards that can affect each jurisdiction(s)? (Requirement §201.6(c)(2)(i))			
B2. Does the Plan include information on previous occurrences of hazard events and on the probability of future hazard events for each jurisdiction? (Requirement §201.6(c)(2)(i))			
B3. Is there a description of each identified hazard's impact on the community as well as an overall summary of the community's vulnerability for each jurisdiction? (Requirement §201.6(c)(2)(ii))			
B4. Does the Plan address NFIP insured structures within the jurisdiction that have been repetitively damaged by floods? (Requirement §201.6(c)(2)(ii))			
ELEMENT B: REQUIRED REVISIONS			
ELEMENT C. MITIGATION STRATEGY			
C1. Does the plan document each jurisdiction's existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs? (Requirement §201.6(c)(3))			
C2. Does the Plan address each jurisdiction's participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement §201.6(c)(3)(ii))			
C3. Does the Plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? (Requirement §201.6(c)(3)(i))			
C4. Does the Plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure? (Requirement §201.6(c)(3)(ii))			
C5. Does the Plan contain an action plan that describes how the actions identified will be prioritized (including cost benefit review), implemented, and administered by each jurisdiction? (Requirement §201.6(c)(3)(iv)); (Requirement §201.6(c)(3)(iii))			
C6. Does the Plan describe a process by which local governments will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? (Requirement §201.6(c)(4)(ii))			
ELEMENT C: REQUIRED REVISIONS			

1. REGULATION CHECKLIST **Regulation** (44 CFR 201.6 Local Mitigation Plans)	Location in Plan (section and/or page number)	Met	Not Met
ELEMENT D. PLAN REVIEW, EVALUATION, AND IMPLEMENTATION (applicable to plan updates only)			
D1. Was the plan revised to reflect changes in development? (Requirement §201.6(d)(3))			
D2. Was the plan revised to reflect progress in local mitigation efforts? (Requirement §201.6(d)(3))			
D3. Was the plan revised to reflect changes in priorities? (Requirement §201.6(d)(3))			
ELEMENT D: REQUIRED REVISIONS			
ELEMENT E. PLAN ADOPTION			
E1. Does the Plan include documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval? (Requirement §201.6(c)(5))			
E2. For multi-jurisdictional plans, has each jurisdiction requesting approval of the plan documented formal plan adoption? (Requirement §201.6(c)(5))			
ELEMENT E: REQUIRED REVISIONS			
OPTIONAL: HIGH HAZARD POTENTIAL DAM (HHPD) RISKS			
HHPD1. Did Element A4 (planning process) describe the incorporation of existing plans, studies, reports, and technical information for high hazard potential dams?			
HHPD2. Did Element B3 (risk assessment) address HHPDs?			
HHPD3. Did Element C3 (mitigation goals) include mitigation goals to reduce long-term vulnerabilities from high hazard potential dams that pose an unacceptable risk to the public?			
HHPD4. Did Element C4-C5 (mitigation actions) address HHPDs prioritize mitigation actions to reduce vulnerabilities from high hazard potential dams that pose an unacceptable risk to the public?			
REQUIRED REVISIONS			
ELEMENT F. ADDITIONAL STATE REQUIREMENTS (OPTIONAL FOR STATE REVIEWERS ONLY; NOT TO BE COMPLETED BY FEMA)			
F1.			
F2.			
ELEMENT F: REQUIRED REVISIONS			

SECTION 2:
PLAN ASSESSMENT

INSTRUCTIONS: The purpose of the Plan Assessment is to offer the local community more comprehensive feedback to the community on the quality and utility of the plan in a narrative format. The audience for the Plan Assessment is not only the plan developer/local community planner, but also elected officials, local departments and agencies, and others involved in implementing the Local Mitigation Plan. The Plan Assessment must be completed by FEMA. The Assessment is an opportunity for FEMA to provide feedback and information to the community on: 1) suggested improvements to the Plan; 2) specific sections in the Plan where the community has gone above and beyond minimum requirements; 3) recommendations for plan implementation; and 4) ongoing partnership(s) and information on other FEMA programs, specifically Risk MAP and Hazard Mitigation Assistance programs. The Plan Assessment is divided into two sections:

1. Plan Strengths and Opportunities for Improvement
2. Resources for Implementing Your Approved Plan

Plan Strengths and Opportunities for Improvement is organized according to the plan Elements listed in the Regulation Checklist. Each Element includes a series of italicized bulleted items that are suggested topics for consideration while evaluating plans, but it is not intended to be a comprehensive list. FEMA Mitigation Planners are not required to answer each bullet item and should use them as a guide to paraphrase their own written assessment (2-3 sentences) of each Element.

The Plan Assessment must not reiterate the required revisions from the Regulation Checklist or be regulatory in nature and should be open-ended and to provide the community with suggestions for improvements or recommended revisions. The recommended revisions are suggestions for improvement and are not required to be made for the Plan to meet Federal regulatory requirements. The italicized text should be deleted once FEMA has added comments regarding strengths of the plan and potential improvements for future plan revisions. It is recommended that the Plan Assessment be a short synopsis of the overall strengths and weaknesses of the Plan (no longer than two pages), rather than a complete recap section by section.

Resources for Implementing Your Approved Plan provides a place for FEMA to offer information, data sources and general suggestions on the plan implementation and maintenance process. Information on other possible sources of assistance including, but not limited to, existing publications, grant funding or training opportunities, can be provided. States may add state and local resources, if available.

A. Plan Strengths and Opportunities for Improvement

This section provides a discussion of the strengths of the plan document and identifies areas where these could be improved beyond minimum requirements.

Element A: Planning Process

How does the Plan go above and beyond minimum requirements to document the planning process with respect to:

- *Involvement of stakeholders (elected officials/decision makers, plan implementers, business owners, academic institutions, utility companies, water/sanitation districts, etc.);*
- *Involvement of Planning, Emergency Management, Public Works Departments or other planning agencies (i.e., regional planning councils);*
- *Diverse methods of participation (meetings, surveys, online, etc.); and*
- *Reflective of an open and inclusive public involvement process.*

Element B: Hazard Identification and Risk Assessment

In addition to the requirements listed in the Regulation Checklist, 44 CFR 201.6 Local Mitigation Plans identifies additional elements that should be included as part of a plan's risk assessment. The plan should describe vulnerability in terms of:

1) *A general description of land uses and future development trends within the community so that mitigation options can be considered in future land use decisions;*
2) *The types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas; and*
3) *A description of potential dollar losses to vulnerable structures, and a description of the methodology used to prepare the estimate.*

How does the Plan go above and beyond minimum requirements to document the Hazard Identification and Risk Assessment with respect to:

- *Use of best available data (flood maps, Hazus, flood studies) to describe significant hazards;*
- *Communication of risk on people, property, and infrastructure to the public (through tables, charts, maps, photos, etc.);*
- *Incorporation of techniques and methodologies to estimate dollar losses to vulnerable structures;*
- *Incorporation of Risk MAP products (i.e., depth grids, Flood Risk Report, Changes Since Last FIRM, Areas of Mitigation Interest, etc.); and*
- *Identification of any data gaps that can be filled as new data became available.*

Element C: Mitigation Strategy

How does the Plan go above and beyond minimum requirements to document the Mitigation Strategy with respect to:

- *Key problems identified in, and linkages to, the vulnerability assessment;*
- *Serving as a blueprint for reducing potential losses identified in the Hazard Identification and Risk Assessment;*
- *Plan content flow from the risk assessment (problem identification) to goal setting to mitigation action development;*
- *An understanding of mitigation principles (diversity of actions that include structural projects, preventative measures, outreach activities, property protection measures, post-disaster actions, etc.);*
- *Specific mitigation actions for each participating jurisdiction that reflects their unique risks and capabilities;*
- *Integration of mitigation actions with existing local authorities, policies, programs, and resources; and*
- *Discussion of existing programs (including the NFIP), plans, and policies that could be used to implement mitigation, as well as document past projects.*

Element D: Plan Update, Evaluation, and Implementation (*Plan Updates Only*)

How does the Plan go above and beyond minimum requirements to document the 5-year Evaluation and Implementation measures with respect to:

- *Status of previously recommended mitigation actions;*
- *Identification of barriers or obstacles to successful implementation or completion of mitigation actions, along with possible solutions for overcoming risk;*
- *Documentation of annual reviews and committee involvement;*
- *Identification of a lead person to take ownership of, and champion the Plan;*
- *Reducing risks from natural hazards and serving as a guide for decisions makers as they commit resources to reducing the effects of natural hazards;*
- *An approach to evaluating future conditions (i.e. socio-economic, environmental, demographic, change in built environment etc.);*
- *Discussion of how changing conditions and opportunities could impact community resilience in the long term; and*
- *Discussion of how the mitigation goals and actions support the long-term community vision for increased resilience.*

B. Resources for Implementing Your Approved Plan

Ideas may be offered on moving the mitigation plan forward and continuing the relationship with key mitigation stakeholders such as the following:

- *What FEMA assistance (funding) programs are available (for example, Hazard Mitigation Assistance (HMA)) to the jurisdiction(s) to assist with implementing the mitigation actions?*
- *What other Federal programs (National Flood Insurance Program (NFIP), Community Rating System (CRS), Risk MAP, etc.) may provide assistance for mitigation activities?*
- *What publications, technical guidance or other resources are available to the jurisdiction(s) relevant to the identified mitigation actions?*
- *Are there upcoming trainings/workshops (Benefit-Cost Analysis (BCA), HMA, etc.) to assist the jurisdictions(s)?*
- *What mitigation actions can be funded by other Federal agencies (for example, U.S. Forest Service, National Oceanic and Atmospheric Administration (NOAA), Environmental Protection Agency (EPA) Smart Growth, Housing and Urban Development (HUD) Sustainable Communities, etc.) and/or state and local agencies?*

SECTION 3:
MULTI-JURISDICTION SUMMARY SHEET

INSTRUCTIONS: For multi-jurisdictional plans, a Multi-jurisdiction Summary Spreadsheet must be completed by listing each participating jurisdiction, which required Elements for each jurisdiction were 'Met' or 'Not Met,' and when the adoption resolutions were received. This Summary Sheet does not imply that a mini-plan be developed for each jurisdiction; it should be used as an optional worksheet to ensure that each jurisdiction participating in the Plan has been documented and has met the requirements for those Elements (A through E).

MULTI-JURISDICTION SUMMARY SHEET												
#	Jurisdiction Name	Jurisdiction Type (city/borough/ township/ village, etc.)	Plan POC	Mailing Address	Email	Phone	Requirements Met (Y/N)					
							A. Planning Process	B. Hazard Identification & Risk Assessment	C. Mitigation Strategy	D. Plan Review, Evaluation & Implementation	E. Plan Adoption	F. State Require-ments
1												
2												
3												
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7												
8												
9												

MULTI-JURISDICTION SUMMARY SHEET												
#	Jurisdiction Name	Jurisdiction Type (city/borough/ township/ village, etc.)	Plan POC	Mailing Address	Email	Phone	Requirements Met (Y/N)					
							A. Planning Process	B. Hazard Identification & Risk Assessment	C. Mitigation Strategy	D. Plan Review, Evaluation & Implementation	E. Plan Adoption	F. State Require-ments
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1 | Introduction

1.1 Overview

During the last two decades, the approach to the emergency management cycle has evolved considerably. A renewed emphasis has been placed on planning for disasters before they occur as a complement to effective response and recovery. As a result, hazard mitigation planning has gained increasing prominence as a critical part of emergency management. Through sustained action to reduce or eliminate the long-term risk to human life, property, communities, and their sense of place, risks can be combated in a systematic and proactive, rather than reactive, manner.

Hazard mitigation continues to be important in Pennsylvania for the same reasons that it is nationally. By anticipating the nature and extent of hazards and the way they affect our communities locally, life and property have been preserved on an impressive scale. In Pennsylvania, hazard mitigation has centered on mitigating the impacts of flooding due to the Commonwealth's particularly high exposure to this hazard. From acquisitions to structural elevations to flood control projects, mitigation actions pay dividends for Pennsylvanians every year. In the process, mitigation activities have positive effects throughout the emergency management cycle. As mitigation actions reduce or eliminate losses from a disaster, response and recovery assets can be better focused.

Start your plan update now!

A County Hazard Mitigation Plan Update Suggested Schedule is located at the beginning of this document on page iv.

Since anticipating hazards is such a critical part of hazard mitigation, hazard mitigation plans (HMPs) must be regularly reevaluated and revised so that our communities' exposure to hazards is always accurately understood. The Federal Emergency Management Agency (FEMA) requires that every five years local HMPs be updated through a plan update process.

In Pennsylvania, counties generally prepare multi-jurisdictional HMPs that cover all the municipalities in their jurisdiction. Pennsylvania Emergency Management Agency (PEMA) developed this Pennsylvania Hazard Mitigation Plan Standard Operating Guide (SOG) in 2010 to streamline the HMP update process for Pennsylvania counties. The SOG was updated in 2013 and 2020. By using this SOG, local jurisdictions and their agents will be able to efficiently prepare FEMA-approvable HMPs.

FEMA and PEMA encourage multi-jurisdictional planning at the county level. County level multi-jurisdictional HMPs are the most efficient and practical way of completing plans, especially in a Commonwealth with so many municipalities. The county level multi-jurisdictional planning process must be inclusive for municipalities, universities, and stakeholders. Pennsylvania has one single jurisdictional HMP for the City of Philadelphia where the county and municipal boundaries are the same. Universities with existing HMPs within the Pennsylvania State System of Higher Education network are encouraged to participate in the next update to their county HMP. PEMA will not consider

funding single jurisdictions or colleges and universities who choose to prepare individual HMPs. Colleges, universities and other institutions should support the hazard mitigation planning process in the county in which they are located.

The intent of the guide is to 1) clarify existing guidance so that emergency managers can focus the majority of their staff hours on planning mitigation actions and increasing the proportion of mitigation funding used directly for mitigation projects; and 2) provide communities more opportunities to excel technically in the preparation of HMPs so that the overall understanding of threats remains accurate and consistent, and that mitigation action taken continues to be appropriate to community character and each unique hazard threat environment.

Each section of this SOG captures a set of FEMA requirements so that communities' efforts to prepare HMPs are rewarded with plan approval by FEMA. The **Planning Process** section reviews the requirements for public participation, approach to updating plans, and documentation of the plan creation or update process. **Risk Assessment** discusses how plan preparers are to document jurisdictions' exposure to hazards. **Capability Assessment** outlines how to address community capacity opportunities for and challenges to mitigation in the HMP. **Mitigation Strategy** instructs plan preparers on how to reformulate plan goals and objectives over the subsequent five-year plan cycle to devise feasible and effective mitigation actions in their jurisdiction. **Plan Maintenance** reviews how local plan preparers will monitor, evaluate, and update the mitigation plan within the subsequent five-year plan cycle. It also discusses how local plan preparers are to maintain continuing public participation during this period and how they are to integrate the mitigation plan with other local planning mechanisms. **Plan Adoption** includes the schedule and manner in which local jurisdictions must adopt plan updates. The last section of the guide, **Mitigation Implementation**, aids jurisdictions in carrying out mitigation strategies. It explores the funding streams available for mitigation action and provides direction on how to undertake such action so that the best mitigation measures are selected and efficiently pursued. Sections 2 through 6 of this SOG (those based primarily on FEMA regulations for plan updating) contain "steps" and "products." **Steps** are the actions required to update an HMP, and **products** are the documentation of such actions in the final updated HMP.

This SOG also incorporates considerations for protecting historic and cultural resources that are vulnerable to natural hazards, highlighting why preserving these resources is fundamental to preserving community character and sense of place.

In May 2019 the Department of Homeland Security made funding available for through the High Hazard Potential Dams (HHPD) Rehabilitation Program under the National Dam Safety Program. Applicants must meet program requirements by addressing dam risk in HMPs and Environmental Planning and Historic Preservation (EHP) compliance. This SOG includes guidance for incorporating HHPD elements into the HMP.

There are several appendices to this SOG. They include a model plan outline (MPO) to be used for HMP updates in the Commonwealth and various job aids and questionnaires to be used throughout the planning process.

1.2 Multi-Jurisdictional Planning

The responsibility for emergency management in the United States is shared across many levels of government and the private and nonprofit sectors. In Pennsylvania, counties generally prepare multi-jurisdictional HMPs that cover all the municipalities in their jurisdiction. FEMA and PEMA encourage multi-jurisdictional plans such as these. Jurisdictions benefit from participating in a multi-jurisdictional planning process because it enables a comprehensive approach to the mitigation of hazards that affect multiple jurisdictions, avoids duplication of efforts, imposes an external discipline on the process, and allows jurisdictions to leverage individual capabilities and share costs and resources. These integrated HMPs make best use of scarce resources and build more resilient communities. While most issues are better resolved by evaluating hazards more comprehensively at the county level, municipalities should address their risks and impacts by developing projects specific to their hazard needs. These focused issues are then included in the county HMP. Entities such as individual municipalities, cities, universities, colleges, school districts and private nonprofit organizations and utilities may wish to draft their own HMPs to specifically address risks and elements that are unique to them. **However, PEMA will not consider funding requests for single jurisdictions or institutional HMPs.**

Pennsylvania County HMPs must follow the format of the Pennsylvania Model Plan Outline and found in Appendix 1 of this SOG. County plans which do not follow the format will not be considered for review. County plans must use the FEMA standard hazard definitions found in Appendix 6 of this guide. County plans do not have to profile all of the hazards profiled in the Commonwealth of Pennsylvania State HMP, however all hazards profiled must use the FEMA definition for consistency and to ensure stakeholders have a common understanding of risk and vulnerability across all HMPs. For new hazards or those without a standard FEMA definition such as the opioid crisis, counties should use the SOG definition also found in Appendix 1.

1.3 State Hazard Mitigation Plan

The Commonwealth of Pennsylvania, under the Disaster Mitigation Act of 2000 (DMA 2000) which amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act (the Stafford Act), is required to have a State HMP in order to receive certain types of disaster assistance and hazard mitigation funding. Mitigation planning requirements emphasize greater interaction between State and local mitigation activities to ensure comprehensive mitigation planning takes place. It is important for local jurisdictions and the Commonwealth to approach hazard mitigation planning in a mutually beneficial manner. State and local planning efforts must remain consistent in order to streamline hazard mitigation planning and achieve successful implementation of effective mitigation actions.

As a local jurisdiction, you should review and evaluate the State HMP before proceeding to update your own HMP. All local plans should integrate, to the extent possible, the hazard mitigation goals and objectives of the state. Likewise, the Commonwealth is required to integrate hazard mitigation information that you provide in your plan, into the State HMP. The State HMP can be a useful tool when developing or updating your own plan. It provides a list of the most common and threatening hazards that have been identified by the State and can be used as a resource to help you gather data on past and future occurrence, vulnerability and risk. In addition, the State plan includes a Mitigation Strategy which should be taken into consideration and linked with your own HMP to the extent possible.

Pennsylvania's first plan was drafted and approved in 2004 which was the beginning of federally required HMPs in order to obtain funds for mitigation projects. All state HMPs must be updated every

five years. An electronic copy of the current State HMP can be obtained by visiting the PEMA website at http://www.pema.state.pa.us or https://www.pennsylvaniahmp.com/home.

1.4 Authority and References

Authority for this guide originates from the following federal sources:

- Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C., Section 322, as amended;
- Code of Federal Regulations (CFR), Title 44, Parts 201 and 206; and
- Disaster Mitigation Act of 2000, Public Law 106-390, as amended.

Authority for this guide originates from the following Commonwealth of Pennsylvania sources:

- Pennsylvania Emergency Management Services Code. Title 35, Pa C.S. Section 101.
- Pennsylvania Municipalities Planning Code of 1968, Act 247 as reenacted and amended by Act 170 of 1988.
- Commonwealth of Pennsylvania 2018 State Hazard Mitigation Plan, October 2018.

The following Federal Emergency Management Agency (FEMA) guides and reference documents were used to prepare this document:

- FEMA. 386-6: Integrating Historic Property and Cultural Resource Considerations into Hazard Mitigation Planning. May 2005.
- FEMA P-467-2: National Flood Insurance Program (NFIP) Floodplain Management Bulletin: Historic Structures. May 2008.
- FEMA. Hazard Mitigation Assistance Unified Guidance. June 1, 2010.
- FEMA. Mitigation Ideas. A Resource for Reducing Risk to Natural Hazards. January 2013.
- FEMA. Integrating Hazard Mitigation into Local Planning: Case Studies and Tools for Community Officials. March 1, 2013
- FEMA. Local Multi-Hazard Mitigation Planning Guidance. July 1, 2008.
- FEMA. Local Mitigation Planning Handbook. March 2013.
- FEMA. Hazard Mitigation Assistance Guidance. February 27, 2015.
- FEMA. Rehabilitation of High Hazard Potential Dams (HHPD) Grant Program FAQ. July 2019.

The following Pennsylvania Emergency Management Agency (PEMA) guides and reference documents were used to prepare this document:

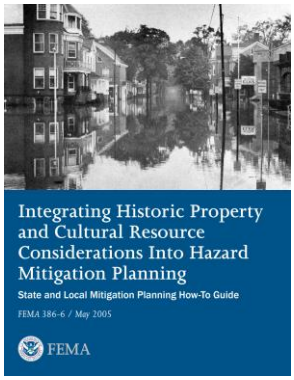
- PEMA. Administrative Processes. December 20, 2019.
- PEMA. Hazard Mitigation Planning Made Easy!

FEMA Guidance

FEMA regularly updates guidance related to hazard mitigation planning. Visit fema.gov to find current guidance. This SOG aims to condense the national guidance into single document tailored to Pennsylvania.

The 2013 Local Mitigation Planning Handbook is the most current FEMA guidance on hazard mitigation planning. The handbook replaced the earlier "386 series" on hazard mitigation planning.

You may find additional helpful information in *Integrating Historic Property and Cultural Resource Considerations into Hazard Mitigation Planning* from May 2005.



- PEMA. Mitigation Ideas: Potential Mitigation Measures by Hazard Type; A Mitigation Planning Tool for Communities. March 6, 2009.

The following Pennsylvania Historic Museums Commission (PHMC) guides and reference documents were used to prepare this document:

- PHMC. Bureau of Historic Preservation's Guidance for Historic Preservation Planning. April 2009.

2 | Planning Process

44 CFR Requirement

Part 201.6(b): [The planning process shall include]: 1) an opportunity for the public to comment on the plan during the drafting stage and prior to plan approval, 2) an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process, and 3) the review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.

Part 201.6(c)(1): [The plan shall document] the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.

OVERVIEW:

A well-defined planning process is vital to the success of your HMP. To begin the update process, you must bring together a variety of stakeholders and solicit input from the public. Moreover, it is important that the processes used to review and update the plan be documented in detail. A Hazard Mitigation Planning Team (HMPT) must review and analyze each section of the plan and include documentation of that review. Documentation must also be provided to verify public and stakeholder participation throughout the entire process. Establishing a Steering Committee, which is a smaller group of usually 2-5 individuals, to help drive the planning process and reconvene the HMPT is also recommended and proven to be effective.

HOW-TO:

Documenting the process of updating your HMP is critically important to demonstrate that the plan has been prepared in compliance with all applicable regulations. Eliciting participation from a broad range of stakeholders requires a systematic process, such as the one described below.

Required Format!

A hazard mitigation plan **model plan outline (MPO)** is provided in Appendix 1 of this guide. Cues throughout this guide note locations were the *products* from each *step* in the update process go in the MPO.

Step 1: Build the Planning Team.

An ideal HMPT consists of local emergency and floodplain management staff, planning staff and a diverse set of stakeholders who will be affected by any mitigation action stemming from the plan. A stakeholder is any organization that has assets, operates in, or moves through the county. In addition, participation from each jurisdiction is required. In a plan update, it is worthwhile to engage the same stakeholders who were involved in the creation or update of the previous plan if possible. Pennsylvania State Historic Preservation Officer (SHPO) should be consulted early during the integration of historic and cultural resources into the hazard mitigation planning process. If feasible, working with a preservation professional who meets the Secretary of the Interior's (SOI) Professional Qualifications Standards is also encouraged. Make an effort to include representatives from the following groups, departments and agencies:

- Local and regional government:
  - Planning
  - Emergency Management
  - Public Health
  - GIS/Mapping
- Businesses and development organizations
- Universities and other academic institutions
- Adjacent counties/communities
- Pennsylvania Department of Community and Economic Development
- Pennsylvania Department of Environmental Protection
- Pennsylvania Emergency Management Agency
- Pennsylvania Historic and Museum Commission
- County Conservation District
- Local Fire Department
- Local Police Department
- Neighborhood groups and housing organizations
- Environmental associations
- Local Historic Commission/Local Historic Architectural Review Board representative
- State Historic Preservation Office Community Preservation Coordinator
- Preservation professional meeting qualifications of SOI Standards
- Nonprofit entities
- Volunteer disaster relief organizations such as the Red Cross

After selecting HMPT members, assign responsibilities to the team members, and define a schedule for the completion of the project.

PRODUCT:

1) A list of individual participants and organizations involved in the planning process and a description of their roles. Insert this product into Section 3.2 of the MPO.
2) A description of the involvement of local municipalities in the update process and a matrix documenting the nature of the involvement of each jurisdiction's participation in the planning process. Include a documentation of attempts to engage municipal participation and note what the change in participation has been between the previous plan and the current plan. Insert this product into Section 3.5 of the MPO. Appendix 2 | contains a sample table that you can use to document municipal participation in the planning process. If a jurisdiction is not participating in the plan, include clear language of attempts to engage the jurisdiction.

Sample Outreach Activities

- **Conducting outreach activities at pre-planned public events, such as festivals and fairs.**
- **Soliciting the completion of surveys through meetings, mail or online.**
- **Placing advertisements or announcements in your local newspaper, library, and grocery stores.**
- **Create a project website!**

3) A discussion of past participation of local municipalities in the previously adopted plan. Insert this product into Section 3.5 of the MPO.

Step 2: Gather Tools.

To begin, you will need to collect and inventory all of the existing data and information to which you should have relatively easy access. The following is a basic list of crucial and/or commonly used plans, checklists, tools, and data that will assist with you with kicking-off the HMP update process:

- **Current County HMP** in digital format (preferably an editable version such as Microsoft Word). Ensure you have a complete copy of the HMP that includes all supporting information; appendices, annexes, maps, charts and tables. Make every attempt to locate existing data files such as geospatial mapping data, so hazard maps will be easier to reproduce.
- **FEMA Local Mitigation Plan Review Tool** that corresponds with you current HMP and should have recommended revisions from PEMA and/or FEMA for your next HMP update. When the updated HMP is submitted to PEMA/FEMA you must include an updated Plan Review Tool.
- **Pennsylvania State Hazard Mitigation Plan** which is available on PEMA's website.
- **Pennsylvania Hazard Mitigation Plan Standard Operating Guide** (congratulations you can check this off of your list!)
- **County/Regional Comprehensive Plan**
- **County Emergency Operations Plan**
- **Zoning, Subdivision and Land Development codes**
- **Emergency Action Plans (EAPs),** inundation maps, or other dam risk related data and documentation *(to meet HHPD funding requirements)*
- **FEMA Flood Insurance Rate Map (FIRM)** data, particularly the county flood risk database
- **FEMA Risk Mapping, Analysis and Planning (Risk MAP) data** (where available). This may include a Discovery Report, Flood Risk Report, and/or Hazus analysis.

PRODUCT:

1) Data and documentation collection and inventory that will inform the planning process. *Don't forget to document how these tools were used to update the HMP!*

Step 3: Create a Workspace.

Getting numerous stakeholders together in one place can be challenging especially with size limitations, busy schedules and competing local priorities. Spend time at the beginning of the planning process considering physical space available to you for in-person meetings, as well as other workspace and meeting options such as online/virtual opportunities that will support collaboration and engagement.

When considering **physical workspace** ask the following questions:

- How many seats will be needed?
- Is table space necessary?
- What about extra space for break-out and work groups?
- Is audio-visual equipment available?

- How far will stakeholders have to travel to meet in-person? Should there be multiple physical meeting locations offered or is one central workspace sufficient?

Online workspace can go a long way towards information sharing and sending and receiving data and feedback. Online options can also save time and money. Consider enhancing the planning process by taking advantage of some of these options:

- Supplement in-person meetings by offering an online virtual meeting using webinar software. This may increase participation, especially for those stakeholders that are further away from the physical meeting location.
- Hold teleconference meetings; these are especially valuable for smaller, interim meetings with Steering Committees and established workgroups.
- Set up an HMP project website (or page on the county website) and store planning documentation, plan update information, and announcements on the site throughout the planning process while allowing for the receipt of questions and feedback via online forms. Website analytics (tracking "hits" or site visits) is an important part of this outreach tactic in order to document its effectiveness.

PRODUCT:

1) Designated physical and virtual workspace and tools to promote participation and collaboration throughout the planning process.

Step 4: Engage the Public and Other Stakeholders.

You must also engage the general public, not just county and municipality officials and staff, throughout the planning process to meet federal requirements and to ensure that the plan will continue to be used to its full potential. Therefore, you should invite the general public and local officials to several forums to communicate the planning process and its implications and solicit focused input. A table containing **Meeting Schedule Options** can be found at the end of this section. Consider using various types of available media to garner participation. Robust public participation is preferred, and attempts should be made to gain 100% municipal participation. Documenting the opportunity to participate is a must for the HMP and be sure to include clear language of attempts to engage jurisdictions that did not participate in the last plan as well as efforts to re-engage those already participating in the plan.

A comment period should be provided and advertised to allow an opportunity for the public and stakeholders to comment on the draft HMP. The comment

Sample Public Notice

PUBLIC NOTICE
Notice is hereby given that the Hazard County Planning Commission and Emergency Management Agency are in the process of updating the Hazard County Hazard Mitigation Plan. The final public meeting for the plan is scheduled for 7:00 pm on Wednesday, November 14, 2019 at the Hazard County Courthouse, located at 500 Mitigation Way, Hazard, Pennsylvania 11911. The plan will be posted for review and comment through December 14, 2019 at www.HazcoHMP.com For questions, please contact Peter Prepared at 555-100-1000 or peter@hazcopa.gov.

period should end before the date of formal submission to PEMA/FEMA so all comments can be incorporated in the plan.

PRODUCT:

1) A description of all meetings and forums (including public meetings) held during the plan update process. Include meeting dates, locations, and discussion topics for each meeting. Insert this product into Section 3.3 of the MPO.
2) A description of the involvement of jurisdictions, the public, neighboring communities, any college or university representatives, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, other academia, and other private and nonprofit interests throughout the planning process. Insert this product into Section 3.4 of the MPO.
3) A description of tools (worksheets and surveys) distributed to meeting and forum participants to solicit data, information, and comments. Insert this product into Section 3.4 of the MPO.
4) A compilation of meeting and outreach materials (invitations, agendas, sign-in sheets, minutes, completed worksheets and surveys, public announcements, press releases, mailing lists, and newspaper and website notices etc.) from all stages of the plan update process attesting to the opportunities for and nature of stakeholder and public participation in the planning process. Insert this product into Appendix C of the MPO.
5) Documentation of any comments received on the draft plan and instances of advertising of public access of the plan for comment (flyers, newspaper notices, websites). If a public notice is used, it should be placed in a newspaper at least one week prior to the meeting. Insert this product into Section 3.4 of the MPO.

Hazard Mitigation Planning Checklist

Use the Hazard Mitigation Planning Checklist found at the beginning of this document on page iii to ensure you have completed all of the steps required for your County HMP Update!

Step 5: Sustain Outreach Activities throughout the Planning Process

Create a schedule that provides ample opportunity for public comment and adhere to it. By sustaining public outreach activities throughout the planning process and continuing through the five-year cycle, you signal to the ultimate users and beneficiaries of the plan that their contributions are more than symbolic.

PRODUCT:

1) An HMP update and outreach schedule.

Step 6: Document the Approach to Updating Each Section of the Plan.

It is important to document any changes from the previous plan that you make to your updated plan such as content and format. It is equally as important to state in text when there are no changes.

PRODUCT:

1) A description of the approach of the HMPT to the update process for each section of the plan indicating which sections have been reviewed, revised, and what changes have been made, such as incorporating historic and cultural considerations. Also include a discussion of specific changes in the process/procedures/ stakeholders. Insert this product into Sections 3.1, 4.1, 5.1, 6.1 and 7.1 of the MPO.
2) A table summarizing changes to the format and content of each section of the county's previously adopted HMP and the updated HMP. Insert this product into Section 3.1.

Jurisdictional Requirements for Participation

An approvable Hazard Mitigation Plan must describe how each jurisdiction participated in the plan's development.

RESOURCES:

- FEMA Local Mitigation Planning Handbook

Example Meeting Schedules		
Option*	**Summary**	**Meetings**
Condensed	Consider the Condensed option when working with a short timeframe for updating a plan and/or when a contractor has been hired to assist in the plan update effort. The update could be completed in less than six months.	**3-4 Meetings:** • Kickoff • Risk Assessment and Capability Review • Mitigation Strategy Development and Review • Draft Plan Review *(Public Notice)*
Standard	The Standard option can be selected when there is ample time to complete the plan update and can be used even when a contractor has been hired. An updated plan could be completed in six to nine months.	**6 Meetings:** • Kickoff • Risk Assessment Review • Capability Assessment • Mitigation Strategy Development and Review • Draft Plan Review *(Public Notice)* • Plan Implementation
Enhanced	This is the most participatory option. A contractor may assist, but much of the work is done by the HMPT. The Enhanced option will likely be the costliest option in terms of time and resources. Can result in a plan update in 9-12 months.	**9-12 Monthly Meetings:** Meetings to be held monthly in addition to subgroup meetings. Meeting types will be similar to those in the Standard option above. Additional meetings will be held for risk assessment development and mitigation strategy development, largely to bring in experts to educate the HMPT.
NOTE: The information in this table should be used only as a conceptual guide to help you get started with planning process. Your county will ultimately choose a meeting schedule that meets the unique needs of the community based on time and available resources. **Options are specific to the level of effort associated with outreach and engagement and do not represent any official plan "type"; established minimum requirements for HMP content apply to all participation options.*		

3 | Community Profile

OVERVIEW:

Community characteristics are the basic geographical, demographic, historic, cultural, and environmental features of a county and the jurisdictions within it. They are important for understanding the hazards as well as the response capabilities of a county in an enlarged context. By including information on these characteristics in your plan update, you enable all stakeholders involved in hazard mitigation to approach the more specialized aspects of mitigation. Maps are a useful tool for showing features of your community; maps that you create should be as locally specific as data allows. In this section, you should also cite any data sources and describe any data limitations encountered in preparation of the HMP update with a focus on geospatial data for structures, parcels, and critical facilities.

HOW-TO:

Step 1: Describe Geography and the Environment.

Describe the geographical location of the county and its land area. Describe its topography and any water features and watersheds in the county.

PRODUCT:

1) A description of the county's geographical location, land area, topography, and water features in the designated section of the HMP. Insert this product into Section 2.1 of the MPO.
2) A base map for the county, showing municipal boundaries, major roads, railroads, water bodies, and surrounding counties. Insert this product into Section 2.1 of the MPO.

Step 2: Describe Community; Include Relevant Facts.

Research and provide a description of the county and jurisdictions within it, including history, major industries, landmarks, cultural resources, and other places or information of interest.

PRODUCT:

1) A description of the county and its jurisdictions that includes history, major industries, landmarks, and other places or information of interest. Insert this product into Section 2.2 of the MPO.
2) A list and/or map of the location of known historic and cultural resources within the community that are vulnerable to natural hazards, and identification of areas that may need additional inventory, and where more research and surveying would be beneficial.

Step 3: Summarize Demographics.

Provide a summary of the demographics within the county and its jurisdictions. Include data on population, population density, racial composition, age breakdown, income, and housing.

PRODUCT:

1) A summary of the demographics within the county and its jurisdictions, including population, population density, racial composition, age breakdown, income, and housing, presented in the designated location in the HMP. Insert this product into Section 2.3 of the MPO.

2) Include a table of population by municipality. Insert this product into Section 2.3 of the MPO.

Step 4: Describe Growth Trends and Land Use.

Research and describe the population growth rate of the county, existing and projected land uses, and the extent of developed area. Provide information where available on how land uses are changing. A map showing current land use is valuable information to help evaluate hazard areas.

PRODUCT:

1) A summary of the growth trends in the county, including population growth, changing land use, and the overall extent of developed area. Insert this product into Section 2.4 of the MPO.
2) A map of existing land use for the county. Insert this product into Section 2.4 of the MPO.

Step 5: Describe Data Sources and Limitations.

Describe and/or list the data sources used to provide the information in your HMP update. This may include geographic information system (GIS) data, Census data, tax data, critical facilities, and data used in the risk assessment and hazard profiles, and historic and cultural resource inventories. Note major databases or datasets used along with corresponding sources. Also, note any data limitations that you encounter such as limited data availability or outdated data. During the process of hazard profiling (see Section 4.2 Profiling Hazards), it is likely that data limitations will be encountered. Data and information will be more readily available for some hazards than others. Use the most recent data sources available and if older information is the best available, state this in the plan. Appendix 14 |contains a table of data sources that may be helpful for completion of the plan. Note that bibliographic material used for parenthetical in-text citations should be tracked separately and included in Appendix A (Bibliography) of the MPO.

PRODUCT:

1) Discussion of the data sources used to provide the information in all sections of the HMP and a summary of any data limitations encountered, as well as opportunities for continued data gathering, updating, and coordination. Insert this product into Section 2.5 of the MPO.

RESOURCES:

- Local Hazard Mitigation Plan
- Local planning agency comprehensive plan(s)
- United States Census Bureau materials
- Metropolitan Planning Organization long-range plan(s)
- Risk Assessment Hazard Data Sources (Appendix 14)
- Existing county and local historic preservation plan(s)
- Records of the State Historic Preservation Office or local planning office

Historic and Cultural Resource Integration

Step 4 **is a great place to weave in additional information on how history impacts the development and resiliency of your community. Maps showing** historic expansion and development in relationship to hazards**, and planned land use and development provide valuable information. While summarizing growth trends in the county, consider including a map and description on how historic development patterns have your community. Have development patterns decreased or increased your community's vulnerability to hazards?** Consider mitigation actions to ensure future development improves community resiliency**.**

- PA Department of Community and Economic Development —County Profiles: https://www.workstats.dli.pa.gov/Products/CountyProfiles/Pages/default.aspx
- The Center for Rural Pennsylvania—County profiles: https://www.rural.palegislature.us/county_profiles.cfm
- United States Geological Survey—PA Water Science Center: http://pa.water.usgs.gov
- United States Census Bureau—American Community Survey: http://www.census.gov/acs/
- National Park Service—National Register of Historic Places: https://www.nps.gov/nr/
- Pennsylvania Cultural Resource Geographic Information Systems (CRGIS): https://gis.penndot.gov/crgis

4 | Risk Assessment

4.1 Identifying Hazards

44 CFR Requirement

Part 201.6(c)(2)(i): The risk assessment shall include a description of the type of all [hazards] that can affect the jurisdiction.

OVERVIEW:

Every Pennsylvania County must identify and prioritize natural and human-made hazards and risks and identify the appropriate mitigation actions for reducing losses. This will include reviewing detailed descriptions of all existing hazards and determining if new hazards are present that could affect your community, along with an analysis of the county's vulnerability to those hazards.

Local risk assessments do not need to be based on the most sophisticated technology, but they do need to be accurate, current, and relevant. Your risk assessment, coupled with your mitigation strategy, will be considered and incorporated into Pennsylvania's statewide evaluation of resources and will help to establish statewide goals. Each participating jurisdiction should complete the Hazard Identification and Risk Evaluation Worksheet provided in Appendix 4 | when beginning the Risk Assessment update. This ensures that each jurisdiction's unique risk is captured in the HMP.

HOW TO:

Risk Assessment update begins with reviewing current and new hazards that are a threat to the community. This identification process can be completed using the following steps:

Step 1: Document Past Presidential Disaster Declarations.

A presidential disaster declaration is issued when a disaster has been determined to exceed the capabilities of state and local governments to respond. A list of past presidential disaster declarations in Pennsylvania through May 2020 is provided in Appendix 5 |. Declarations issued since May 2020 can be found online at: http://www.fema.gov/disasters. You may also wish to include and review gubernatorial disaster proclamations which are available on PEMA's website online at https://www.pema.pa.gov/Governor-Proclamations/Pages/default.aspx. Identifying disaster

declarations that have been issued for your community will lead you to information on previous hazard events.

PRODUCT:

1) A table of past presidential disaster declarations that apply to your community. You many also wish to include a table of gubernatorial disaster declarations. Insert this product into Section 4.2.1 of the MPO.

Step 2: Develop a List of Natural and Human-made Hazards for Your Community.

At this point in the process, a hazard does not have to be considered high risk to be captured in your list of identified hazards. A comprehensive list of hazards ensures that no hazard has been omitted, and all potential hazards have been given consideration. Building this list should involve reviewing existing reports, such as the State HMP, or the community's current HMP, conducting interviews with experts or community leaders, reviewing previous incidences (particularly those that have occurred since the development of the current HMP), and performing other research. Provide a clear description of the methodology used to select hazards in the plan and include how and why any hazards that have not been profiled were dismissed. A list with descriptions of natural and human-made hazards identified nationally is provided for your consideration in Appendix 6 |.

High Hazard Potential Dams

If there are High Hazard Potential Dams (HHPDs) in the study area PEMA and FEMA strongly recommend including HHPD mitigation planning elements in your HMP so that affected communities have access to HHPD Rehabilitation Grant funding.

Any new hazards not previously identified in the current HMP shall be considered in developing a list of hazards that may affect your community. Not all communities are susceptible to the same hazards, so care should be taken to inventory and categorize those disasters and hazards typical to your community's region. Provide justification for dismissing any hazards during list development with special attention given to the dismissal of hazards identified in the previous HMP. If high ranking hazards were the focus of the majority of proposed mitigation actions in the existing plan, you should also address medium and low hazards in the plan update. Any hazard that is not possible or has historically not happened in the community can be eliminated from the plan by giving a description and discussion of the rationale for omission.

For each jurisdiction, describe the hazards that may impact your community, including their damage-causing characteristics, written from a broad perspective. Some hazards can be interrelated (for example, hurricane events can cause flooding and tornado activity), and thus discussion of these hazards may overlap, where necessary, throughout the risk assessment.

PRODUCT:

1) A comprehensive table of natural and human-made hazards that were identified through the risk assessment for the HMP. For each hazard in the table, summary information should be included about the evaluation of the hazard including whether or not it was profiled in the existing plan. Insert this product into Section 4.2.2 of the MPO.

RESOURCES:

- Commonwealth of Pennsylvania State Hazard Mitigation Plan
- FEMA Local Mitigation Planning Handbook
- FEMA 433: Using HAZUS-MH for Risk Assessment
- NFPA 1600: Standard on Disaster/Emergency Management and Business Continuity Programs

4.2 Profiling Hazards

44 CFR Requirement

Part 201.6(c)(2)(i): The risk assessment shall include a description of the location and extent of all [hazards] that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.

OVERVIEW:

Hazard profiling investigates the impact, historical occurrence, and probability of future occurrence for hazards that can affect your community, as determined through hazard identification. Hazard profiling exposes the unique characteristics of individual hazards and begins the process of determining which areas within your community are vulnerable to a specific hazard event.

The community risk assessment will include a description of the location and extent of impact for all natural and human-made hazards that can affect your community. It will also include information on previous occurrences of hazard events and the probability of those events occurring in the future. If your planning area consists of multiple jurisdictions, then the local risk assessment must assess risks for each participating jurisdiction, highlighting those risks that are unique from those facing impacting the entire planning area.

HOW-TO:

Develop a profile for each hazard that could impact your community. The hazard profile must incorporate any new data or other information that has become available since your previous HMP was developed, particularly information previously identified as missing or limited. You must identify all sources of data and information. Remember to continue documenting public participation and processes. The hazard profile must include the following six steps:

Useful Tool!

A list of hazard data sources is provided in Appendix 14 | of this guide. Websites, data, and hardcopy references provided in this list will assist in completing Hazard Profile Steps 1-6.

Step 1: Identify the Geographic Location.

Map the areas that are subject to the hazards that can impact your community. This should be accomplished by using the base map you created for your county in Section 3, Step 1, to provide consistent illustrations of the risks posed by each identified hazard. Maps should focus on the county and/or the state, not the nation. At a minimum, areas should be described through a narrative summary. You must identify the geographic boundaries of a hazard impact using the most current information.

PRODUCT:

1) Map with summary illustrating the geographic location of each hazard. Insert this product into Section 4.3.X.1 of the MPO for each profiled hazard.

Step 2: Define the Magnitude.

Describe the magnitude for which your community could be impacted by a particular hazard event. Magnitude and severity are quantitative and/or qualitative measures of the strength of a particular hazard event including minimum and maximum severity. Document the worst recorded event for each hazard that occurred in the history of your community with a detailed narrative about the event. If historical information is not available, describe a possible worst-case scenario.

Examples of Scientific Scales Used to Measure Hazard Extent

- Beaufort Wind Scale
- Fujita Scale (tornadoes)
- Richter Scale (earthquakes)
- Saffir-Simpson Scale (hurricanes)
- TORRO Hail Scale
- Palmer Index (drought)

PRODUCT:

1) Summary of the potential extent of each hazard
2) . Insert this product into Section 4.3.X.2 of the MPO for each profiled hazard.

Step 3: Profile Past Occurrences.

This task involves compiling data on hazard events from many different sources (websites, newspaper archives, local library sources, and anecdotal evidence from residents). Include as many past occurrence events as possible going back in time as far as data allows. Discuss hazard events that have occurred in or near the planning area. To the extent possible, your discussion should include the following information for each hazard event:

- Date(s) of occurrence.
- A general narrative of the overall impact of the event.
- Recorded intensities or severity of the event (e.g., flood depth, wind speeds, or earthquake intensity).
- Information on the local damage(s) that occurred (e.g., cost [s] associated with recovery efforts, property and infrastructure damage, casualties, loss of function, shelters activated, etc.).
- Duration of the event.

PRODUCT:

1) A discussion of past occurrences including date, severity, loss, and duration and any other available information of each event. Insert this product into Section 4.3.X.3 of the MPO for each profiled hazard.

Step 4: Summarize Repetitive Loss Properties (Flood Hazard Only).

Under the National Flood Insurance Program (NFIP), FEMA defines repetitive loss (RL) structures as structures covered by a contract for flood insurance that have incurred flood-related damages on two or more occasions during a ten-year period in which the cost of repair on average equaled or exceeded 25 percent of the value of the structure at the time of the flood event. Additionally, repetitive loss properties can be categorized as severe repetitive loss (SRL) properties which are single-family properties covered under NFIP flood insurance that:

- Have at least four flood related damage claim payments (including building and contents) over $5,000 each, and the cumulative amount of such claims payments exceeds $20,000; or

- For which at least two separate claim payments (building payments only) have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building.
- For both instances, at least two of the reference claims must have occurred within any 10-year period and must be greater than 10 days apart.

Your local mitigation plan must address RL and SRL properties by describing structure types (single family residential, non-residential etc.) and estimating the numbers of repetitive loss properties located in identified flood hazard areas in each jurisdiction. **Note: Repetitive loss information is subject to the Privacy Act of 1974. Names of property owners and addresses of properties cannot be included in the plan, however, repetitive loss properties can be mapped on a broader level such as watershed or community.**

PRODUCT:

1) A table summarizing the number and structure type (single family, non-residential etc.) of RL and SRL properties in each community. Insert this product into Section 4.3.X.3 of the MPO of the flood hazard profile.

Step 5: Establish Probability of Future Occurrence.

The likelihood of a hazard event happening is usually expressed in terms of frequency. It is critically important to establish a probability of occurrence so that community officials can make informed decisions about the sustainability of future development and determine the feasibility of proposed mitigation projects. For example, a "1%-annual-chance flood" has a one percent chance, or probability, of occurring in any given year. Ideally, this section will provide statistical measures on the probability that a particular hazard event will occur in your community. Future occurrence probabilities presented in the current HMP must be updated or revised to reflect the newest information available for a particular hazard. Since predicting future hazard events is not an exact science, it is legitimate to base the prediction of future hazard occurrences on past occurrence. The more historical data you can obtain, the more accurate your calculated probability of future occurrence will be for a given hazard.

The HMPT should consider incorporating information about climate change into profiles for hazards that may be exacerbated by climate change such as flooding, drought, wildfire, extreme temperatures, invasive species, etc.

PRODUCT:

1) An assessment of the probability of future hazard events occurring. Insert this product into Section 4.3.X.4 of the MPO for each profiled hazard.

Helpful Hint:

When writing your Hazard Mitigation Plan, include Product 1 of Step 6 for environmental impacts, in the Range of Magnitude section (4.3.X.2) of your plan.

Step 6: Determine Environmental Impacts.

Certainly, any hazard event has the potential to impact the environment. For example, flood events may pollute streams and rivers due to combined sewer overflows or permanently disrupt the character of a community by damaging historic and cultural landscapes and resources, while a tornado or wind event will disperse trash and

debris over a wide area. A drought may affect the environment in a different way, by drying up wetlands and weakening or killing trees and forestlands. For each hazard, explain the negative impacts upon the surrounding natural and human-made environment.

PRODUCT:

1) A list and/or description of the potential environmental impacts from each hazard. Insert this product into Section 4.3.X.2 of the MPO for each profiled hazard.

RESOURCES:

- FEMA Local Mitigation Planning Handbook
- FEMA 433: Using HAZUS-MH for Risk Assessment

4.3 Assessing Vulnerability

44 CFR Requirement

Part 201.6(c)(2)(ii): The risk assessment shall include a description of the jurisdiction's vulnerability to the hazards described in *(c)(2)(i)* of this section. The description shall include an overall summary of each hazard and its impact on the community. The plan should describe vulnerability in terms of: 1) the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas and, 2) an estimate of the potential dollar losses to vulnerable structures identified in paragraph *(c)(2)(i)(A)* of this section and a description of the methodology used to prepare the estimate; 3) providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.

OVERVIEW:

A vulnerability assessment applies the information collected through the hazard profile to your community's assets to summarize the impacts from hazards on the community and its vulnerable structures. These impacts are represented by measures such as population at risk, percent damages, and dollar loss estimation. Understanding the presence of historic and cultural resources and potential impacts to them from hazards can help illustrate the risk to the character of a particular community. Information provided by the vulnerability assessment includes the areas of your community that are susceptible to each hazard and the areas where the highest losses could occur. This type of information will provide a factual basis for developing effective mitigation strategies.

The primary objective of the vulnerability assessment is to enable you to prioritize hazards of concern for your community, in relation to the most important and valuable community resources, so that a mitigation strategy can be developed.

HOW-TO:

Hazard vulnerability analysis involves data collection and analysis on how the community may be impacted by different types of disasters. The purpose of this analysis is to identify weaknesses or vulnerabilities prior to an event so that mitigation action plans may prevent or reduce the potential impacts of disasters. Strong analysis includes both quantitative and qualitative methodologies; for instance, geographic information systems (GIS)-based analysis and local knowledge are both important inputs to identifying vulnerabilities. Hazard vulnerability analysis must include the following five steps:

Step 1: Inventory and Summarize Vulnerable Assets.

Collect any updated inventories of existing buildings, infrastructure, historic and cultural resources, and critical facilities in hazard areas, including new development, re-developed areas, or assets located in newly annexed areas. At a minimum, consider the following items:

- Building Stock Inventory
- Critical Facilities
- Manufactured Housing Units (Mobile Homes)
- Transportation Systems (e.g., airways, highways, railways, waterways)
- Lifeline Utility Systems (e.g., potable water, electricity, natural gas)
- Communication Systems and Networks

- High Potential Loss Facilities (e.g., nuclear power plants, dams)
- Hazardous Material Facilities
- Economic Elements
- Special Consideration Areas
- Natural Resource Areas
- Historic and Cultural Resources (National Register listed and/or eligible properties, properties located within local districts, landmarks, archaeological sites, local programs/ordinances, other significant resources)

For historic and cultural resources, there are new properties becoming potentially significant every year, so updates to existing inventories can be valuable even where no physical changes have occurred. It is important to pursue opportunities to combine historic resource data and hazard mitigation data collection efforts. The PA SHPO should be consulted as it is possible that there are existing surveying efforts planned into which hazard risks can be incorporated. Appendix 17 provides data collection checklists for historic and cultural resources and flood vulnerability to assist you with this analysis.

Prepare descriptions for the structures that include construction characteristics, such as year built, building materials, freeboard, and foundation types, and indicate structures that are vulnerable to more than one hazard. For historic and cultural resources, consult with SHPO staff to determine if information is available for specific areas or if further inventory is required to document potential historic and cultural resources. To complete Step 1, consider the following actions:

- Identify special high-risk groups, such as elderly, low-income, or disabled populations.
- Estimate or count the total number of buildings and estimate the value of buildings and the number of people throughout your entire community and within previously identified hazard areas.
- Calculate the proportion of vulnerable assets located within your community's hazard areas versus assets located across your entire planning area.
- Consider completed mitigation actions that reduce overall vulnerability.
- Consider existing ordinances such as steep slope ordinances or ordinances requiring the anchoring of manufactured housing units that reduce overall vulnerability.
- Consider National Register-listed and/or eligible resources and districts, as well as locally designated historic sites and districts.

For flood hazards only, your plan must include a map of the known flood hazards: the floodplain shown on the preliminary or effective Flood Insurance Rate Map (FIRM), critical facilities, structures, historic and cultural resources, areas not mapped on the FIRM that have flooded in the past, and any surface flooding identified in existing studies. Use the map to determine the number and type of critical facilities and manufactured housing units located in the special flood hazard areas (SFHA) for each jurisdiction. No new studies need to be conducted for the plan update.

For dam hazards only, your plan should describe the risk and vulnerability to and from HHPD, including a description of upstream and downstream flooding potential, data on at risk populations, and a summary of potential impacts to critical facilities and infrastructure.

PRODUCT:

1) A table of critical facilities and the municipality in which each is located. Indicate whether the facilities are located within the geographic extent of each hazard whenever possible. Insert this product into Appendix E of the MPO.
2) An overall summary of your community's vulnerability to each hazard that discusses the impact each hazard could have on your community, including a general description of the type and number of structures affected by each hazard type. Include existing and future buildings, infrastructure, critical facilities and important historic and cultural resources located in the identified hazard areas. If any colleges or universities are participating in the HMP, include unique vulnerabilities identified by the institution in the appropriate hazard profiles, including any buildings or infrastructure vulnerable to the profiled hazards. Describe any changes, clarifications, or refinements to the vulnerability assessment methodology included in your community's previously approved HMP. Insert this product into Section 4.3.X.5 of the MPO for each profiled hazard.
3) Flood vulnerability maps that show critical facility locations. Insert this product into Appendix D of the MPO.
4) A summary of vulnerability for repetitive loss properties located within the identified flood hazard areas. Insert this product into Section 4.3.X.5 of the flood hazard profile.
5) Include documentation of the process and sources used to identify existing vulnerable structures, future structures, repetitive loss properties and historic and cultural resources. Insert this product into Section 4.4.1 of the MPO.

Step 2: Estimate Loss.

You must update potential dollar loss estimates for vulnerable structures in your community. At a minimum, fair market and replacement value should be assessed. Additionally, content and functional loss and displacement cost can be included in the total dollar loss estimate.

- Fair Market or Assessed Value: Value is based on an independent appraisal by a licensed and certified appraiser.
- Replacement Value: Current cost of returning an asset to its pre-damaged condition, using present-day cost of labor and materials.
- Content Loss: Value of building's contents, typically measured as a percentage of the building's replacement value.
- Functional Loss: The value of a building's use or function that would be lost if it were damaged or closed.
- Displacement Cost: The dollar amount required for relocation of the function (business or service) to another structure following a hazard event.

Your community's HMP must explicitly recognize any changes to the methodology or assumptions used in the update of estimated potential dollar losses. This allows for straightforward comparison with past and future vulnerability assessment results.

When possible, Hazus software, FEMA's nationwide standardized GIS-based loss estimation tool for flood, hurricane wind, and earthquake should be used. Hazus is built on an integrated geographic information systems platform with a national inventory of baseline geographic data and U.S. Census data. Originally designed for the analysis of earthquake risk, FEMA has expanded the program to allow for the analysis of multiple hazards: namely the flood and wind (hurricane wind) hazards. Hazus uses a statistical approach and mathematical modeling of risk to predict a hazard's frequency of occurrence and estimated impacts based on recorded or historic damage information. By providing estimates on potential losses, Hazus facilitates quantitative comparisons between hazards and may assist in the prioritization of hazard mitigation activities. Ensure that Hazus results reports are included as an appendix to your plan.

A relatively simple statistical risk assessment can be performed for hazards outside the scope of Hazus (e.g. winter storms, drought, terrorism, etc.). For those hazards, a GIS-based approach using the best available local data can be used. For example, using tax parcel or structure data to determine the number of mobile homes in a community would provide information on the value of properties most vulnerable to severe wind. When combined, the results of these vulnerability studies provide information on potential hazard losses (in dollars) along with the identification of specific community assets that are deemed potentially at risk.

PRODUCT:

1) An estimate of potential dollar losses from vulnerable structures for each identified hazard when dollar loss information is available. Insert this product into Section 4.4.3 of the MPO.
2) A description of the methodology used to prepare the potential dollar loss estimates for all losses (HAZUS, analyzing parcel data, etc.). When using Hazus, identify which version of Hazus is used and the level of Hazus analysis done. If a Level 2 analysis was not completed, state why and what data would be needed to do a Level 2 analysis. Insert this product into Section 4.4.3 of the MPO.

Step 3: Characterize Repetitive Loss Properties (Flood Only).

The plan should describe vulnerability by presenting an estimate of the potential dollar losses to repetitive loss properties and the methodology used in estimate preparation, and by relating vulnerability to general land uses and development trends within repetitive loss areas.

PRODUCT:

1) An estimate of the potential dollar losses to repetitive loss properties. Insert this product into Section 4.4.3 of the MPO.
2) A general description of land use and development trends within repetitive loss areas. Insert this product into Section 4.4.4 of the MPO.

Step 4: Develop Risk Factor for Profiled Hazards.

Ranking hazards helps communities set goals and strategies for mitigation based on their vulnerabilities. Risk Factor (RF) Methodology is a tool used to measure the degree of risk for identified hazards in a particular planning area. The RF can also be used to assist local community officials in ranking and prioritizing those hazards that pose the most significant threat to their area based on a variety of factors deemed important by the HMPT and other stakeholders in the hazard mitigation planning process.

The RF system relies mainly on historical data, local knowledge and general consensus opinions from the HMPT. **It is critical that these opinions are formed, and RF calculated after hazards have been profiled. Hazard profiling provides information (e.g. location and spatial extent, range of magnitude, previous occurrences, probability of future occurrence, etc.) that may not be immediately obvious beforehand.** Be consistent in language between the hazard profiles and the risk factor table. The risk factor rankings should match the described probability, magnitude, impacts, and losses from each profile. The RF is used for hazards with no available GIS data or relevant information to perform quantitative analyses, and it can provide important insights to crosscheck or validate the quantitative results when they are available.

The RF approach produces numerical values that allow identified hazards to be ranked against one another (the higher the RF value, the greater the hazard risk). RF values are obtained by assigning varying degrees of risk to five categories for each hazard: probability, impact, spatial extent, warning time, and duration. Each degree of risk is assigned a value ranging from 1 to 4 with a corresponding weighing factor. The RF approach is summarized in the RF Approach table below. Based upon any unique concerns for the planning area, the HMPT may also adjust the RF weighting scheme.
To calculate the RF value for a given hazard, the assigned risk value for each category is multiplied by the weighting factor. The sum of all five categories equals the final RF value, as demonstrated in the example equation:
Hazards identified as high risk have risk factors greater than or equal to 2.5. Risk Factors ranging from 2.0 to 2.4 are considered moderate risk hazards. Hazards with Risk Factors less than 2.0 are considered low risk. According to the default weighting scheme applied, the highest possible RF value is 4.0. Prior to being finalized, RF values for each hazard must be reviewed by the HMPT.

Risk Factor Methodology Equation

RF Value = [(Probability x .30) + (Impact x .30) +
(Spatial Extent x .20) + (Warning Time x .10) + (Duration x .10)]

A risk assessment result for the entire county does not mean that each municipality is at the same amount of risk to each hazard. Each jurisdiction should evaluate the countywide risk factors for each hazard and determine if its risk is greater than (>), less than (<), or equal to (=) the risk factor assigned to the county as a whole. Appendix 16 |contains a sample table for recording and comparing jurisdictional risk to hazards.

Summary of Risk Factor (RF) Methodology				
Risk Assessment Category	**Degree of Risk**			**Weight Value**
	Level	**Criteria**	**Index**	
PROBABILITY *What is the likelihood of a hazard event occurring in a given year?*	**UNLIKELY**	LESS THAN 1% ANNUAL PROBABILITY	**1**	**30%**
	POSSIBLE	BETWEEN 1% & 49.9% ANNUAL PROBABILITY	**2**	
	LIKELY	BETWEEN 50% & 90% ANNUAL PROBABILITY	**3**	
	HIGHLY LIKELY	GREATER THAN 90% ANNUAL PROBABILTY	**4**	
IMPACT *In terms of injuries, damage, or death, would you anticipate impacts to be minor, limited, critical, or catastrophic when a significant hazard event occurs?*	**MINOR**	VERY FEW INJURIES, IF ANY. ONLY MINOR PROPERTY DAMAGE & MINIMAL DISRUPTION ON QUALITY OF LIFE. TEMPORARY SHUTDOWN OF CRITICAL FACILITIES.	**1**	**30%**
	LIMITED	MINOR INJURIES ONLY. MORE THAN 10% OF PROPERTY IN AFFECTED AREA DAMAGED OR DESTROYED. COMPLETE SHUTDOWN OF CRITICAL FACILITIES FOR MORE THAN ONE DAY.	**2**	
	CRITICAL	MULTIPLE DEATHS/INJURIES POSSIBLE. MORE THAN 25% OF PROPERTY IN AFFECTED AREA DAMAGED OR DESTROYED. COMPLETE SHUTDOWN OF CRITICAL FACILITIES FOR MORE THAN ONE WEEK.	**3**	
	CATASTROPHIC	HIGH NUMBER OF DEATHS/INJURIES POSSIBLE. MORE THAN 50% OF PROPERTY IN AFFECTED AREA DAMAGED OR DESTROYED. COMPLETE SHUTDOWN OF CRITICAL FACILITIES FOR 30 DAYS OR MORE.	**4**	
SPATIAL EXTENT *How large of an area could be impacted by a hazard event? Are impacts localized or regional?*	**NEGLIGIBLE**	LESS THAN 1% OF AREA AFFECTED	**1**	**20%**
	SMALL	BETWEEN 1 & 10.9% OF AREA AFFECTED	**2**	
	MODERATE	BETWEEN 11 & 25% OF AREA AFFECTED	**3**	
	LARGE	GREATER THAN 25% OF AREA AFFECTED	**4**	
WARNING TIME *Is there usually some lead time associated with the hazard event? Have warning measures been implemented?*	**MORE THAN 24 HRS**	SELF-DEFINED	**1**	**10%**
	12 TO 24 HRS	SELF-DEFINED	**2**	
	6 TO 12 HRS	SELF-DEFINED	**3**	
	LESS THAN 6 HRS	SELF-DEFINED	**4**	
DURATION *How long does the hazard event usually last?*	**LESS THAN 6 HRS**	SELF-DEFINED	**1**	**10%**
	LESS THAN 24 HRS	SELF-DEFINED	**2**	
	LESS THAN 1 WEEK	SELF-DEFINED	**3**	
	MORE THAN 1 WEEK	SELF-DEFINED	**4**	

(NOTE: Levels of warning time and criteria that define them may be adjusted based on hazard addressed.)

PRODUCT:

1) A table that provides a Risk Factor for each hazard identified to guide mitigation goals and action plan creation. A template is provided for you in Appendix 8. Insert this product into Section 4.4.2.
2) A description of the risk factor approach methodology. Insert this product into Section 4.4.1 of the MPO.

3) A table that provides a comparison of jurisdictional risk for each hazard to countywide risk. Insert this product into Section 4.4.2 of the MPO.

Step 5: Describe Asset Vulnerability of Future Development.

It may be possible to identify future vulnerable assets as part of the update to your community's asset inventory. Including this information is extremely valuable to your community's risk assessment. Additionally, your community must describe vulnerability as it relates to existing land use, population growth, development types and trends, and historic context throughout your planning area by considering the following:

- Amount and location of development growth over time
- Similar land-use types with distinctly different population densities
- Expected future land use based on comprehensive plans, zoning, redevelopment plans, or proposed annexation areas
- Expected growth or redevelopment over the next five to 10 years

Often this information is discussed in the county comprehensive plan or in municipal land use plans. The information should be tied to hazard areas. If possible, overlay hazard mapping with expected future development/growth areas to spatially show future risk. A description should be provided if certain municipalities have experienced significant population growth stating why and indicating if the population growth has occurred in hazard-prone areas.

Continue to incorporate newly identified historic and cultural resources into the plan with each HMP update. Consult with PA SHPO staff to determine if new resources have been listed on the National Register.

PRODUCT:

1) A description of how land use and development trends are expected to impact vulnerability noting hazard-specific changes in vulnerability when possible. Insert this product into Section 4.4.4 of the MPO.

RESOURCES:

- FEMA Local Mitigation Planning Handbook
- Hazus (https://www.fema.gov/hazus)
- FEMA: Assessing the Consequences of Dam Failure: A How-To Guide
- Comprehensive land use plan
- National Register of Historic Properties (NRHP) Inventory
- Historic context data (settlement and development patterns, historically hazard-prone areas)
- Pennsylvania Historical & Museum Commission (PHMC) State Historic Preservation Office Guidance for Historic Preservation Planning
- Cultural Resources Geographic Information System: https://gis.penndot.gov/crgis

5 | Capability Assessment

44 CFR Requirement

Part 201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvements, when appropriate.

OVERVIEW:

Performing the capability assessment is important to formulate a viable mitigation strategy later in the planning process. A capability assessment has three components: an inventory of a jurisdiction's existing planning and regulatory tools, an analysis of its capacity to use them effectively, and a review and summary of how the mitigation plan will be integrated into other planning mechanisms. The assessment process helps identify existing gaps, conflicts and/or weaknesses that may need to be addressed through future mitigation planning goals, objectives, and actions. It also highlights the measures in place that merit continued support and enhancement through future mitigation efforts. The capability assessment helps to ensure that proposed mitigation actions are practical considering the local ability to implement them.

HOW-TO:

Step 1: Complete the Capability Assessment Survey.

PRODUCT:

1) A completed Capability Assessment Survey for each participating jurisdiction and the county. A blank survey is located in Appendix 3 |. Completed surveys should be inserted into the updated plan. Insert this product into Appendix C, Meeting and Other Participation Documentation, of the MPO.

Step 2: Compile and Analyze Information from the Capability Assessment.

Create an inventory of existing documents, programs and regulatory tools. Describe how each identified program relates to hazard mitigation. Identify any existing gaps, weaknesses or conflicts within the planning area. This will help guide the mitigation strategy process and permit possible future improvement in your capabilities.

Helpful Hint!

Develop mitigation actions that will address any gaps identified in local mitigation capabilities.

PRODUCT:

1) A capability inventory. Include a table of planning tools (comprehensive plan, building code, floodplain ordinance – NFIP participation, subdivision and land development ordinance, zoning ordinance, historic preservation plan and/or ordinance) adopted by each municipality. Insert this product into Section 5.2.1 of the MPO.
2) Descriptions of all of the planning mechanisms and local capabilities currently in place in your jurisdiction and how each one aids hazard mitigation efforts as well as a summary of existing limitations to hazard mitigation capabilities. Organize the descriptions in the following sub-categories:

- Planning and Regulatory
- Administrative and Technical
- Financial Capability
- Education and Outreach

Insert this product into the corresponding sub-sections (5.2.1, 5.2.2, 5.2.3, 5.2.4) of the MPO.

3) A completed Self-Assessment Capability Matrix (SOG Appendix 3), which records the results from Section 5 of the Capability Assessment Survey completed by each jurisdiction. Insert this product into Section 5.2.5 Self-Assessment of the MPO.

Step 3: Determine Participation in the National Flood Insurance Program (NFIP).

All mitigation plans must describe each jurisdiction's participation in the NFIP and must identify how the current nature of participation aids hazard mitigation efforts. If there are non-participating jurisdictions, discussion on any efforts being made to encourage them to become members of the program. Note which communities use the PA Model Floodplain Management Ordinance if possible and if any communities have adopted more restrictive ordinances (specifically in areas such as freeboard, hazardous materials in the SFHA, and critical facilities in the SFHA). Also note which jurisdictions administer their own floodplain ordinance and which work with the county to administer on their behalf. Utilize the NFIP Checklist in Appendix 15 to assist with this task.

Identify historic structures in the floodplain that have obtained and maintained flood insurance through the NFIP, and those that have not. These structures can be insured at subsidized rates, providing a significant financial benefit to property owners. Flood insurance compensates for all covered losses, ensures historic structures can be repaired and restored, and is the best form of financial protection against the devastating effects of floods.

PRODUCT:

1) A completed Checklist to Identify Local Compliance with the National Flood Insurance Program (SOG Appendix 15) for each participating jurisdiction and the county. Completed checklists should be inserted into Appendix C, Meeting and Other Participation Documentation, of the MPO.
2) A description of each jurisdiction's participation in the NFIP based on results from the completed NFIP checklist and how actions currently taken to comply with the NFIP relate to hazard mitigation. The description should include the following components:
    - Framework for managing the NFIP
    - Permitting process
    - How residents are assisted with mapping
    - Compliance and enforcement mechanisms (i.e. is PA Model Floodplain Management Ordinance used or is a more restrictive ordinance used)
    - Community Rating System (CRS) participation
    - Information on any sanctioned or suspended jurisdictions

    Insert this product into Section 5.2.1 of the MPO.

Step 4: Describe Integration with Existing Planning Mechanisms.

Use and document 1) how your HMP has or will be integrated into local plans and programs, and 2) how existing mechanisms have been incorporated into your HMP.

Review the previously approved HMP and determine how it was incorporated into other planning mechanisms over the last five years. Using this knowledge, describe how the updated mitigation strategy will be integrated with other strategies, goals and objectives in existing and future plans and reports, including those relevant to preserving and protecting historic and cultural resources. For example, was information from the previously approved HMP incorporated into a comprehensive plan update that took place over the last five years or if there is a comprehensive update planned for the near future, how will information from the updated HMP be incorporated into it? Additionally, the data collection process should be integrated where possible. For example, when surveying of historic and cultural resources is being undertaken by local or state entities, collecting natural hazard-related data should also be encouraged.

If your county has an approved Act 167 Plan, are there ways you can incorporate stormwater information from the plan into the flood profile of your HMP and vice versa. The following are a few examples of plans and documents that can be considered for review and integration:

- Commonwealth of Pennsylvania State Hazard Mitigation Plan
- Local Floodplain Management Ordinances
- Local Stormwater Management Plans (i.e. Act 167 Plans)
- County or Regional Comprehensive Plan
- Emergency Operations Plan
- County and Local Zoning and Sub-Division and Land Use Ordinances
- Open Space and Greenways Plans
- Watershed Plans
- Disaster-Resistant University Plans
- Recovery and Resiliency Plans
- County and Local Historic Preservation Plans, HARB districts, Certified Local Government Guidelines, and other historic and cultural resource planning documents.

PRODUCT:

1) A summary of integration into existing mechanisms and incorporation of local plans and programs. Insert this product into Section 5.2.5 of the MPO.

RESOURCES:

- FEMA Local Mitigation Planning Handbook
- FEMA Integrating Hazard Mitigation Into Local Planning: Case Studies and Tools for Community Officials
- FEMA 386-6: Integrating Historic Property and Cultural Resource Considerations Into Hazard Mitigation Planning
- FEMA P-467-2: National Flood Insurance Program (NFIP) Floodplain Management Bulletin: Historic Structures
- FEMA Hazard Mitigation: Integrating Best Practices into Planning
- FEMA Mitigation Planning and the Community Rating System

6 | Mitigation Strategy

6.1 Evaluating Existing Hazard Mitigation Goals, Objectives, and Action Plan

44 CFR Requirement

Part 201.6(c)(3)(i): [The hazard mitigation strategy shall include a] description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.

The HMPT will review the goals, objectives, and actions in the existing plan and note progress made toward goal achievement, reaffirm goals to be included in the update, and change goals based on current conditions, or discard them. Remaining goals and objectives will be coupled with new ones created later in the process to develop a new mitigation strategy.

HOW-TO:

Step 1: Review the Existing Mitigation Plan Goals and Objectives.

This step is best completed during the project mitigation solutions meeting and can be accomplished through conducting a group exercise or by administering a survey and compiling the results. Appendix 7 includes a Goal and Objective Review Worksheet that has been created to help you accomplish this task. This worksheet can be handed out at the mitigation solutions meeting and completed by meeting participants. Notes should be taken to reflect that each goal and objective was discussed, evaluated, what changes were made if any, and if any new goals or objectives should be added to the plan. All goals from the previous HMP must be kept or incorporated into the plan. If a goal is no longer relevant, its removal must be explained.

PRODUCT:

1) A summary table of information collected from the Goal and Objective Review Worksheets completed by participants of the project kickoff meeting. It should list all existing goals and objectives with supporting documentation and discussion relative to goal and objective review and public participation. Insert this product into Section 6.1 of the MPO.
2) Compilation of Goal and Objective Review Worksheets completed by participants at the project mitigation solutions meeting. Insert this product into Appendix C of the MPO.

Step 2: Review the Existing Mitigation Action Plan.

The planning team should review existing mitigation actions by compiling a list of actions and collecting specific information for each, including progress made on the action since the last plan update, the status of the action (complete, in progress, continuous, or discontinued), whether the action should be continued in the current plan, and if the action is to be discontinued, the reason for its discontinuation. A narrative should be provided for each action to fully describe its status, including percent complete, conditions needed to complete the action, how frequently “continuous” actions occur, when and how a “completed” action was accomplished, etc. A Mitigation Action Plan Review Worksheet, located in Appendix 7, can be filled out by the members of the planning team for this step. The community should also highlight and describe any successful mitigation projects.

PRODUCT:

1) A summary table of information collected from Mitigation Action Plan Review Worksheets completed by members of the planning team as part of the review process. It should list all mitigation actions from the current approved plan with supporting documentation and discussion relative to action review and public participation. Insert this product into Section 6.1 of the MPO.
2) Compilation of Mitigation Action Plan Review Worksheets completed by members of the planning team as part of the review process. Insert this product into Appendix C of the MPO.

RESOURCES:

- Local Hazard Mitigation Plan
- FEMA Local Multi-Hazard Mitigation Planning Guidance: Mitigation Strategy

6.2 Update Mitigation Goals and Objectives

OVERVIEW:

In this section of the HMP, you must update existing mitigation goals and objectives. Developing clear goals and objectives that reinforce your overall purpose and mission for undertaking a mitigation planning process keeps the HMPT focused and helps clarify solutions to problems and issues as they arise. Goals and objectives that are agreed upon by the planning team, elected officials, and the public provide the necessary framework upon which mitigation action decisions will be based.

HOW-TO:

Step 1: Review Three Key Items: Updated Risk Assessment, Updated Capability Assessments, and Evaluation of Existing Goals and Objectives.

To effectively formulate new goals and objectives, you must review key updated plan information. During this review, keep the following questions in mind:

- Do the goals and objectives identified in the previously approved plan reflect the updated risk assessment?
- Did the goals and objectives identified in the previously approved plan lead to mitigation projects and/or changes in policy that helped the jurisdiction(s) reduce vulnerability?
- Do the goals and objectives identified in the previously approved plan support changes in mitigation priorities?
- Do the goals identified in the updated plan reflect current state goals?
- Do the goals and objectives include hazard mitigation considerations for community historic and cultural resources?

Helpful Tip!

Goals are general guidelines that describe what your community would like to achieve.

Objectives define strategies that must be implemented to achieve the identified goals. Objectives are specific and measurable.

PRODUCT:

1) A narrative of the evaluation of the updated risk and capability assessments and existing goals and objectives. Insert this product into Section 6.1 of the MPO.

Step 2: Develop Mitigation Goals and Objectives.

Hazard mitigation goals are general guidelines that explain what you want to achieve in your community. They represent broad policy statements and are usually long-term and represent global visions. Hazard mitigation objectives define strategies or implementation steps to attain the identified goals but are not as specific as mitigation actions. Unlike goals, objectives are specific, measurable, and may have a defined completion date.

Example

Goal 1: Increase public awareness and support for hazard mitigation.
- **Objective 1A:** Publicize the hazard mitigation plan and encourage the implementation of mitigation actions.

Goal 2: Protect vulnerable assets.
- **Objective 2A:** Enact appropriate regulatory measures to lessen the impact of future development on existing structures.
- **Objective 2B:** Update building codes to ensure that the most effective floodproofing standards are being utilized.

Be sure to consider whether the goals you are developing conflict with those of other community plans and the goals identified in Pennsylvania's State HMP. Consider goals and objectives that focus on hazard mitigation for historic and cultural resources.

It is important that the goals and objectives are attainable and manageable. You must identify at least one objective for each goal, and objectives must always support the goal with which they are associated.

Include goals and strategies focused on reducing long-term vulnerability to high hazard potential dams to be eligible for HHPD grant funding.

PRODUCT:

1) A list of updated mitigation goals and objectives. Insert this product into Section 6.2 of the MPO. (Note Public participation involved in the development of mitigation goals and objectives should be described in Section 3.3 of the MPO and meeting documentation should be included in Appendix C of the MPO.)

Step 3: Include Goals and Objectives Related to a Jurisdiction's Continued Compliance with NFIP Requirements.

All mitigation plans must now describe each jurisdiction's participation in the NFIP and must identify, analyze, and prioritize actions related to continued compliance. Since all actions must come from appropriately identified goals and objectives, the updated plan must incorporate goals and objectives that reasonably relate to these actions. Consider the following example of a goal and its related objective:

- **Goal:** Protect property from future flood damage.
- **Objective:** Enact and enforce regulatory measures that ensure new development will not increase flood threats to new and existing properties.

In the above example, the goal and the objective reasonably relate to specific actions that would comply with NFIP requirements. Be sure to check applicable goals and their objectives to ensure that they support NFIP-compliant actions.

PRODUCT:

1) Goals and objectives related to continued compliance with the NFIP included in the list of updated mitigation goals and objectives noted in the previous Product description. Insert this product into Section 6.2 of the MPO.

RESOURCES:

- Local Hazard Mitigation Plan
- FEMA Local Mitigation Planning Handbook
- FEMA 386-6: Integrating Historic Property and Cultural Resource Considerations Into Hazard Mitigation Planning
- FEMA Local Multi-Hazard Mitigation Planning Guidance: Mitigation Strategy
- Updated Risk Assessment and Capability Assessment
- Evaluation of goals and objectives in existing hazard mitigation plan
- FEMA P-467-2: National Flood Insurance Program (NFIP) Floodplain Management Bulletin: Historic Structures
- Secretary of the Interior's Standards for the Treatment of Historic Properties

6.3 Evaluating Mitigation Techniques for Profiled Hazards

44 CFR Requirement

Part 201.6(c)(3)(ii): [The mitigation strategy shall include a section that identifies] a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.

OVERVIEW:

The mitigation strategy in the updated plan must analyze a comprehensive range of specific mitigation actions or projects being considered, with a particular emphasis on new and existing buildings. In this step, the categories of mitigation techniques will be evaluated against each hazard to see if they apply.

HOW-TO:

Step 1: Review the Four Categories of Mitigation Techniques.

To evaluate your mitigation actions, it is important to understand the four categories of hazard mitigation techniques defined by FEMA and outlined in the table below.

Mitigation Technique	Description	Examples
Local plans and regulations	These actions include government authorities, policies, or codes that influence the way land and buildings are developed and built.	• Comprehensive plans • Land use ordinances • Subdivision regulations • Development review • Building codes and enforcement • NFIP and CRS • Capital improvement programs • Open space preservation • Stormwater management regulations and master plans
Structure and infrastructure	These actions involve modifying existing structures and infrastructure or constructing new structures to reduce hazard vulnerability.	• Acquisitions and elevations of flood prone structures • Utility undergrounding • Structural retrofits • Floodwalls and retaining walls • Detention and retention structures • Bridges and culverts • Safe rooms

Mitigation Technique	Description	Examples
Natural systems protection	These actions minimize damage and losses and also preserve or restore the functions of natural systems.	• Sediment and erosion control • Stream corridor restoration • Forest management • Conservation easements • Wetland restoration and preservation
Education and awareness	These actions inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them and may also include participation in national programs.	• Radio or television spots • Websites with maps and information • Real estate disclosure • Training • NFIP outreach • StormReady • Firewise Communities

Note that emergency services actions can reduce the impacts of a hazard event on people and property but typically are not considered mitigation techniques as they do not meet the hazard mitigation definition of reducing or eliminating "long-term" risks cause by hazards. These actions are usually taken during and immediately after an emergency or disaster. Examples include warning systems, evacuation planning and management, emergency response training and exercises, and emergency flood protection procedures. Emergency service actions can certainly be included in your mitigation strategy but keep in mind that they are evaluated on a case by case basis for mitigation funding.

Step 2: Complete the Mitigation Strategy Technique Matrix.

To ensure the mitigation action plan is comprehensive and to identify any gaps in mitigation techniques the HMPT should complete a mitigation technique matrix. The matrix is used to compare hazards and corresponding mitigation action techniques. The matrix should only be completed for hazards included in the vulnerability assessment. A simple matrix has been created to assist you with this task and can be found in Appendix 9.

PRODUCT:

1) A matrix of hazards and corresponding mitigation techniques to be included in the updated plan. Insert this product into Section 6.3 of the MPO.

RESOURCES:

- FEMA Local Mitigation Planning Handbook
- FEMA 386-6: National Flood Insurance Program (NFIP) Floodplain Management Bulletin: Historic Structures
- FEMA Mitigation Planning Handbook
- FEMA P-467-2: NFIP Floodplain Management Bulletin: Historic Structures
- Secretary of the Interior's Standards for the Treatment of Historic Properties

6.4 Developing the Mitigation Action Plan

44 CFR Requirement

Part 201.6(c)(3)(ii): [The mitigation strategy shall include a section that analyses] a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.

Part 201.6(c)(3)(ii): [The mitigation strategy] must also address the jurisdiction's participation in the NFIP, and continued compliance with NFIP requirements, as appropriate.

Part 201.6(c)(3)(iii): [The mitigation strategy section shall include] an action plan describing how the actions identified in section (c)(3)(ii) will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.

OVERVIEW:

Now that mitigation goals and objectives have been updated and mitigation technique categories have been identified, work can begin on developing the new mitigation action plan(s).

A mitigation action is more specific than an objective and should address identified objectives from SOG Section 6.2, Steps 2 and 3. These actions make up the basis of your HMP. Taking action to mitigate hazards should lessen the community's vulnerability when disaster occurs. Here is an example of an objective and corresponding mitigation actions.

- **Objective:** Increase the number of buildings protected from flooding.
- **Mitigation Action A:** Conduct floodproofing assessments in the historical downtown business district and develop a FEMA mitigation project.
- **Mitigation Action B:** Elevate the police department building.

HOW-TO:

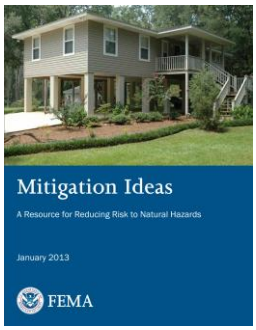
Step 1: Brainstorm Possible Mitigation Actions.

Helpful Hint!

Make sure that mitigation actions are specific and measurable.

Through the use of a brainstorming exercise, obtain input from every participating jurisdiction to identify possible mitigation actions. In this step, the updated risk assessment, the updated capability assessment, updated goals and objectives, the existing HMP's mitigation action plan with progress noted, and the completed mitigation technique matrix all become data sources that the county and its jurisdictions can use to identify new mitigation actions. **A minimum of one mitigation action must be identified for each hazard. Each participating jurisdiction in the planning process must identify at least one specific mitigation action for which it will be responsible.** If any colleges or universities are participating in the HMP, they should also be encouraged to submit mitigation actions for the mitigation strategy. If high ranking hazards were the focus of the majority of proposed mitigation actions in the existing HMP, you should address medium and low hazards in the plan update.

Once again, in this step, you must document community participation. Explain how each jurisdiction provided mitigation actions (via a form, phone, email, etc.). Identified actions should also address reducing the effects of hazards on new and existing structures and infrastructure. At least one overarching action pertaining to performing structural projects or property protection including elevation, acquisition, relocation, and/or retrofitting should be included in the plan so that those types of projects to mitigate losses from floods and earthquakes can be funded after a disaster occurs.



Visit fema.gov and search for the title **Mitigation Ideas.** This document lists great ideas for mitigation actions by hazard that you can use and tailor to your community.

In coordination with PA SHPO, develop hazard mitigation actions for historic and cultural resources. These hazard mitigation actions should provide structural and/or physical protection to historic and cultural resources, while still maintaining a sense of place, historic integrity, and eligibility. The applicability of elevation and relocation will vary between individual historic districts and properties. For historic and cultural resources, relocation is often a non-preferred hazard mitigation alternative, as moving an individual historic building can cause it to be de-listed from a historic register, while relocating several buildings can jeopardize the eligibility of an entire historic district. For specific communities that take potential impacts on historic integrity and significance into account, development of community/district-specific elevation and relocation plans should be considered, accounting for any local HARBs, design guidelines, or other available historic and cultural resource plans.

Any changes to historic buildings should reference the SOI's Standards for the Treatment of Historic Properties, which provides guidance on the preservation, rehabilitation, restoration, and reconstruction of historic properties, is regulatory for projects receiving Historic Preservation Fund grant assistance and other federally-assisted projects, and otherwise provides general guidance for treatment on any historic building.

Dam Failure

Develop and prioritize mitigation actions to reduce vulnerabilities from high hazard potential dams such as creating EAPs, adopting special land use codes in dam inundations areas, or rehabilitating/removing HHPDs.

PRODUCT:

1) Detailed description of how mitigation actions were selected, including how those actions relate to historic and cultural resources. Insert this product into Section 6.4 of the MPO. Community participation involved with the brainstorming and selection of mitigation actions should be described in Section 3.3 of the MPO and meeting documentation should be included in Appendix C of the MPO.

Step 2: Include NFIP-Related Mitigation Actions.

FEMA requires that every participating jurisdiction that either participates in the NFIP or has identified SFHAs have at least one specific action in its mitigation action plan that relates to continued compliance with the NFIP. FEMA does not permit generic mitigation actions for continuing compliance, such as "Community will continue to participate in the NFIP." Instead, the action must point to a specific, implementable measure to enhance the jurisdiction's compliance. Sample actions are listed below.

- Investigate the possibility of adopting more stringent regulatory floodplain management standards.
- Conduct NFIP training for contractors and insurance agents in the community.
- Develop an NFIP and floodplain management section at the public library.
- Develop a web site to expedite the processing of building or zoning permits.
- Complete all outstanding follow-up items from the most recent Community Assistance Visit (CAV).
- Apply for participation in the Community Rating System (CRS).
- Post signage in highly visible areas indicating floodplain boundaries and the need for floodplain development permits.
- Obtain training for the floodplain variance board members.

Keep in mind that if too many mitigation actions are generated from the brainstorming session, techniques for reducing the list of actions can be used, such as weighted voting.

Although listed historic resources are exempt from the NFIP floodplain management requirements for new and substantially improved construction, so long as they maintain their historic designation, flood mitigation measures should be a consideration to minimize flood damages when rehabilitating a historic structure or repairing a damaged historic structure (44 CFR §60.3). A designated historic structure can still obtain the benefit of subsidized flood insurance through the NFIP even if it has been substantially improved or substantially damaged, so long as the building maintains its historic designation.

Local communities/HARBs are encouraged to coordinate with the PA SHPO and the county to develop hazard mitigation strategies that are sensitive to the specific historic and cultural resources and/or resource types present in the community, while also considering the SOI's Standards for the Treatment of Historic Properties.

PRODUCT:

1) A list of NFIP mitigation actions related to continuing compliance with NFIP regulations. This list can be combined with other non-NFIP related mitigation actions. Insert this product into Section 6.4 of the MPO.
2) A specific set of hazard mitigation actions to minimize flood damages to specific historic buildings and structures, in addition to types of buildings and structures.

Step 3: Evaluate and Prioritize Mitigation Actions.

Evaluating and prioritizing mitigation actions involves judging each action against certain criteria to determine the benefit and value of each action. The local mitigation planning team and/or participating jurisdictions can evaluate the priority of mitigation actions using PEMA's Multi-Objective Mitigation Action Prioritization Method. You will score each action against five weighted evaluation criteria to

achieve a prioritization score between 1 and 3 as illustrated below. You may utilize the Mitigation Action Assessment in Appendix 10 for this task.

Multi-Objective Mitigation Action Prioritization

Priority Score = [(Effectiveness x .20) + (Efficiency x .30) + (Multi-Hazard Mitigation x .20) + (High Risk Hazard x .15) + (Critical Infrastructure x .15)]

For historic and cultural resources, evaluate hazard mitigation actions based on significance and areas of highest risk. During evaluation of hazard mitigation actions, investigate new designs and materials that do not obscure or alter existing significant historic features to ensure that historic and cultural resources do not lose their historic significance. Additionally, historic and cultural resource-related hazard mitigation actions should be prioritized based on adherence to the SOI's Standards for the Treatment of Historic Properties, and any local design guidelines that a community may already have in place.

PRODUCT:

1) A description of the processes followed to evaluate and prioritize mitigation actions. Insert this product into Section 6.4 of the MPO.
2) A Mitigation Action Prioritization table (see Appendix 10) with feasible mitigation actions and corresponding prioritization score and category (high, medium, or low). Insert this product into Section 6.4 of the MPO.

Step 4: Develop Mitigation Action Plans for Each Participating Jurisdiction.

Each HMP will contain a mitigation action plan for each jurisdiction. Mitigation action plans will list all mitigation action items for each jurisdiction corresponding information:

- Estimated cost: Can an informal cost estimate be obtained, or is there another credible source from which to develop a cost estimate?
- Potential funding sources: What are the programs and/or agencies or entities that could fund this mitigation action? Be as specific as possible.
- Lead agency or department: Who will be the active leader in implementing this action? Indicate the department or official that will be responsible for the implementation of each action.
- Implementation schedule: What is an approximate time frame for completion? Estimating the number of years (i.e., one year, two years, or three years) is recommended.
- Action Technique: To which category does this mitigation measure belong (local plans and regulations, structure and infrastructure, natural systems protection, education and awareness)? Note if an action supports continued compliance with the NFIP.

Use the Mitigation Strategy Action Plan Template in Appendix 11 to help organize and standardize each mitigation action in the plan. **FEMA requires that each participating jurisdiction in the planning process identify at least one hazard-specific mitigation action for which it will be responsible and that at least one of the mitigation actions relate to continued compliance with the NFIP.** There should also be at least one action for each hazard profiled in the plan. In order to meet this requirement, use the

Jurisdiction Action Matrix in Appendix 12 is provided to identify mitigation action numbers of mitigation actions for each community.

There are several types of FEMA funding sources that exist for implementation of mitigation actions/projects. These are discussed in Chapter 10: Mitigation Action Implementation of this SOG. Note that a Hazard Mitigation Grant Program (HMGP) Letter of Intent must be filled out for each mitigation action/project for which you intend to utilize HMGP funding for implementation. In addition, if applying for non-disaster related funding, a Letter of Interest must be filled out. These forms are both located in Appendix 19 and can also be downloaded at https://www.pema.pa.gov/Grants/HMGP/Forms/Pages/default.aspx.

PRODUCT:

1) A mitigation action plan which includes actions for each participating jurisdiction and the county and at least one action for each identified hazard. Insert this product into Section 6.4 of the MPO.

RESOURCES:

- FEMA Local Mitigation Planning Handbook
- Updated Local Risk Assessment and Capability Assessment
- Existing Local Mitigation Action Plan with progress noted
- FEMA 386-6: National Flood Insurance Program (NFIP) Floodplain Management Bulletin: Historic Structures
- FEMA P-467-2: NFIP Floodplain Management Bulletin: Historic Structures
- Secretary of the Interior's Standards for the Treatment of Historic Properties
- FEMA Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards
- FEMA Developing the Mitigation Plan: Identifying Mitigation Actions and Implementation Strategies

7 | Plan Maintenance

44 CFR Requirement

Part 201.6(c)(4)(i): [The plan maintenance process shall include a] section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.

Part 201.6(c)(4)(iii): [The plan maintenance process shall include a] discussion on how the community will continue public participation in the plan maintenance process.

OVERVIEW:

The Plan Maintenance section serves as the basis for subsequent updates to your HMP and should define the processes by which continued public participation will be guaranteed. It will include a schedule for monitoring, evaluating, and updating the HMP over the next five years. HMPs should be reviewed and evaluated annually, at a minimum. It is important to document in detail the "who, when, and how" of maintenance.

HOW-TO:

Step 1: Update the Process for Monitoring, Evaluating, and Updating the HMP.

Start by reviewing the methodology followed for plan maintenance in the previously approved HMP and include information on if or how the plan was updated since the last update. Update the process for monitoring, evaluating, and updating the new plan over the next five years.

Helpful Tip!

If the plan maintenance activities in the previous plan cycle proved too ambitious, revise future plan maintenance activities to be more realistic. Follow-through is the most important component.

PRODUCT:

1) A description of the methodology including scheduling for monitoring the completion of mitigation activities, evaluating the effectiveness of the mitigation plan in attaining plan goals and objectives, and updating the plan within the five-year cycle. Documentation should include an identification of the department(s) and/or individuals (including titles) responsible for maintenance and a timeline for regular review. This section should also state that annual reports or progress reports will be incorporated into the plan and included in the next update. Insert this product into Section 7.2 of the MPO.
2) Tables documenting annual meetings held by the HMPT to review the HMP each year and changes made to the plan, mitigation actions completed, or public outreach completed.

Step 2: Describe Continued Public Participation.

Evaluate public participation during the last five years and update the processes by which the public will be involved in plan maintenance over the next five-year cycle.

PRODUCT:

1) A description of how public participation will be maintained. This should include notification of opportunities provided to the broader public whose members may not be part of the planning process. Consider permanently posting the HMP to the county website if possible. Insert this product into Section 7.3 of the MPO.

RESOURCES:

- FEMA Local Mitigation Planning Handbook

8 | Plan Introduction

OVERVIEW:

The Introduction section of your HMP should be written last and should introduce the reader to hazard mitigation planning and the purpose that the HMP is being completed for your community.

HOW TO:

Step 1: Complete Background Information.

Describe hazard mitigation planning and its importance in the United States and your community. Include information about the HMP preparation (who, what, and when).

PRODUCT:

1) A background section containing information about hazard mitigation planning and plan preparation. Insert this product into Section 1.1 of the MPO.

Step 2: Develop Purpose.

Describe why this HMP is being developed and updated. Reference applicable federal, state, and local HMP requirements.

PRODUCT:

1) A description of the purpose for HMP development. Insert this product into Section 1.2 of the MPO.

Step 3: Prepare Scope.

Describe the topics that the updated HMP covers and the geographic area to which the HMP applies. Describe when plan updates and maintenance will take place. You may also find it useful to draft an Executive Summary (inserted just inside the cover) so that readers can easily obtain a high-level synopsis of your HMP.

PRODUCT:

1) A description of the scope for the plan including what topics the plan covers and its geographic extent. Insert this product into Section 1.3 of the MPO.

Step 4: Document Authority and References.

You should document the authority for the plan and common federal, state, and local references and guidance documents used to prepare the plan.

PRODUCT:

1) A list of federal, state, and local authorities and references. Insert this product into Section 1.4 of the MPO.

9 | Plan Adoption

44 CFR Requirement

Part 201.6(c)(5): [The plan shall include] documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan. For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must document that it has been formally adopted.

OVERVIEW:

Each county and participating jurisdiction must adopt an updated HMP within five years of the previous plan approval date. This process must be thoroughly documented. Communities maintain access to all hazard mitigation grant streams by following the five-year update schedule and meeting plan adoption requirements.

HOW TO:

Step 1: Submit Updated Hazard Mitigation Plan.

You must first submit your updated plan to Pennsylvania's State Hazard Mitigation Officer (SHMO) no less than 75 days prior to your existing plan expiration date. The SHMO and/or State Hazard Mitigation Planner will review the plan for completeness and accuracy and then forward it to FEMA Region III for final review and approval.

Helpful Tip!

Submit your updated plan to Pennsylvania's State Hazard Mitigation Officer (SHMO) who will review the plan and then forward it on to FEMA Region III for final review and approval.

FEMA requires a minimum of 45 days for review. The county submission to FEMA should provide adequate time for both FEMA's review and community adoption prior to the expiration date of the existing plan. **Be prepared to receive and address comments and required revisions from FEMA Region III on your first HMP submission**. For this reason, you should make every effort to submit your HMP to PEMA even more than 75 days before plan expiration to allow for a 2nd FEMA submission and review. If and when FEMA approves the updated plan, it will issue an Approval Pending Adoption (APA) notice. All jurisdictions must adopt their approved HMP no later than one year from the date of the APA notice.

PRODUCT:

1) A complete, updated plan submitted to the SHMO in ample time to allow for PEMA's and FEMA's review period and adoption by each jurisdiction prior to plan expiration date.
2) A completed Local Mitigation Plan Review Tool with your plan submission including a complete municipal contact table (A blank Local Mitigation Plan Review Tool can be found at the beginning of this document).

Step 2: Submit Documentation of Formal Adoption.

Each county should submit documentation of the formal adoption of the updated plan by the county governing body requesting approval and at least one participating jurisdiction as part of the plan prior to the existing plan expiration date. Sample county and municipal adoption resolution templates are contained in Appendix 13 |. For FEMA to grant full approval after the APA notice is given, at least one

participating jurisdiction must adopt the plan. The updated plan expiration date will be exactly five years from the first jurisdiction's adoption date, which is also the official plan approval date.

PRODUCT:

1) A list of all jurisdictions that have adopted the plan and an appendix to your plan with documentation on resolution of formal adoption by each of the participating jurisdictions. Insert this product into Section 8 of the MPO.

RESOURCES:

- FEMA Local Mitigation Planning Handbook

10 | Mitigation Action Implementation

OVERVIEW:

While implementation is not a required section of your plan update, it is arguably the most important part of the process. Action implementation means taking the HMP and putting it to work! This section provides information on mitigation project funding and a description of an approach to implementation. Through the planning process, your community has determined the WHY, WHAT, and WHERE of hazard mitigation.

- WHY damages occur.
- WHAT you want to do to achieve your objectives and goals.
- WHERE in your community you want to implement measures to reduce loss.

To ensure plan implementation, ask yourself these additional questions:

Who? Who will lead implementation efforts? A lead person responsible for managing hazard mitigation efforts must be assigned. Who will put together funding requests and applications? Paid staff or volunteers must be assigned to administer mitigation programs.

When? When will these activities be implemented, and in what order? Determine a schedule for implementation. As mentioned above, top priorities may also be the first items to be implemented, or they may have to wait until a bylaw or ordinance is passed or funding is secured. Many activities may be implemented simultaneously.

How? How will the community fund these projects? Identify a budget and potential source(s) of funding. How will the community physically implement these projects?

Since many of the actions identified may be continuing programs, and since the maintenance of a good plan itself is an ongoing process, action implementation should be incorporated into staff work plans. If volunteer groups are working on the activities or planning, a schedule should be prepared for implementation, and coordination with community officials should be planned. The primary ongoing work will consist of preparing funding proposals for specific activities, whether for the community's review or for outside funding, and scheduling and conducting meetings.

Primary Hazard Mitigation Project Funding Sources

Potential mitigation activities will often come from a variety of sources. Depending on the potential project's intent and implementation methods, several funding sources may be appropriate. There are three types of funding sources under FEMA's Hazard Mitigation Assistance (HMA) Program. 1) Pre-Disaster Mitigation (PDM) and 2) Flood Mitigation Assistance (FMA) are grant programs that have yearly competitive consideration. The 3) Hazard Mitigation Grant Program (HMGP) provides funding only following a declared disaster. These HMA funding sources are described below:

1) **Pre-Disaster Mitigation Program – FEMA:** The Disaster Mitigation Act of 2000 created a national program to provide a funding mechanism that is not dependent on a Presidential disaster declaration. The PDM Program provides funding to states and communities for cost-effective hazard mitigation activities that complement a comprehensive mitigation program and reduce injuries, loss of life, and property damage. The funding is based on a 75 percent federal share,

plus a 25 percent non-federal share of costs. The nonfederal match can be fully in-kind, cash, or a combination. Special accommodations are made for small and impoverished communities that are eligible for 90 percent federal share, plus 10 percent nonfederal. Note: PDM is expected to be replaced by Building Resilient Infrastructure and Communities (BRIC) in 2020 though the rollout timeline for BRIC is subject to change.

Coming Soon!

Building Resilient Infrastructure and Communities (BRIC) pre-disaster hazard mitigation program is expected to replace Pre-Disaster Mitigation (PDM) in 2020. BRIC is a result of amendments to the Stafford Act and is intended to enable innovation, promote partnerships, enable large projects, and maintain flexibility for hazard mitigation aimed at reducing risks from disasters and natural hazards.

https://www.fema.gov/bric

2) **Flood Mitigation Assistance Program – FEMA:** FMA was established by the National Flood Insurance Reform Act of 1994. This program provides grants for cost-effective measures to reduce or eliminate the long-term risk of flood damage to existing structures, with an emphasis on sites that historically have been subject to repetitive losses under the NFIP. These grants are also available for planning assistance to identify flood risks and actions to reduce that risk, to provide a process for approving flood mitigation plans, and to provide grants to implement measures to decrease flood losses.

   Examples of projects that are eligible for grants under this program include elevating or flood-proofing pre-FIRM structures (i.e., structures that were built prior to floodplain management regulations or that were brought into the regulatory floodplain by a revision of the FIRMs), to acquire land or structures in flood hazard areas, to relocate or demolish existing structures, to construct detention or retention ponds to aid in the control of flood waters, to flood proof sewer systems, to modify drainage culverts and to obtain technical assistance (e.g., hiring a professional consultant).

3) **Hazard Mitigation Grant Program (HMGP) – FEMA:** HMGP provides funding for mitigation measures following a Presidential disaster declaration. The HMGP is funded predominantly by the federal government and administered by state governments. FEMA can fund up to 75 percent of project costs and the Commonwealth or local share can be cash or in-kind services. HMGP funds can be used for projects such as acquisition or relocation of structures from hazard prone areas, retrofitting of existing structures to protect them from future damages, and development of state or local mitigation standards designed to protect buildings from future damages, comprehensive state and local mitigation plans, structural hazard control, and the purchase of equipment to improve preparedness and response.

The following table shows activities eligible for grand funding under FEMA's HMA program.

FEMA Grant Program Eligible Activities (FEMA Hazard Mitigation Assistance Guidance, February 2015)			
Mitigation Activity	**HMA Program**		
	HMGP	***PDM**	**FMA**
1. Mitigation Projects	✓	✓	✓
Property Acquisition and Structure Demolition	✓	✓	✓
Property Acquisition and Structure Relocation	✓	✓	✓
Structure Elevation	✓	✓	✓
Mitigation Reconstruction	✓	✓	✓
Dry Floodproofing of Historic Residential Structures	✓	✓	✓
Dry Floodproofing of Non-residential Structures	✓	✓	✓
Generators	✓	✓	
Localized Flood Reduction Projects	✓	✓	✓
Non-localized Flood Risk Reduction Projects	✓	✓	
Structural Retrofitting of Existing Buildings	✓	✓	✓
Non-structural Retrofitting of Existing Buildings and Facilities	✓	✓	✓
Safe Room Construction	✓	✓	
Wind Retrofit for One- and Two-Family Residences	✓	✓	
Infrastructure Retrofit	✓	✓	✓
Soil Stabilization	✓	✓	✓
Wildfire Mitigation	✓	✓	
Post-Disaster Code Enforcement	✓		
5-Percent Initiative Projects	✓		
Advance Assistance	✓		
2. Hazard Mitigation Planning	✓	✓	✓
Planning Related Activities	✓		
3. Technical Assistance			✓
4. Management Costs	✓	✓	✓

Rehabilitation of High Hazard Potential Dams (HHPD) Grant Program

This non-HMA funding source is made available through FEMA's National Dam Safety Program. Dams eligible for repair, removal, or rehabilitation funding include:

Non-federal dams –

- located in a state or territory with a state or territorial dam safety program;
- classified as 'high hazard potential' by the dam safety agency in the state or territory where the dam is located;
- has an emergency action plan approved by the state or territory dam safety agency; and
- the state or territory in which the dam is located determines either of these criteria – the dam fails to meet minimum dam safety standards public.

Visit the High Hazard Potential Dam Rehabilitation Grant Program Resources page at https://www.fema.gov/rehabilitation-high-hazard-potential-dam-grant-program for more information.

HOW-TO: APPLICATION DEVELOPMENT AND GRANTS PROCESS

FEMA's HMA grants are provided to eligible applicant states, tribes, and territories that, in turn, provide subgrants to local governments. FEMA has developed unified HMA guidance that can assist communities interested in applying for funding under FEMA's HMA grant programs. You can access the latest HMA guidance on PEMA's Hazard Mitigation Grants and Projects page (https://www.pema.pa.gov/Mitigation/Grants-Projects/Pages/default.aspx) or by visiting FEMA's web site (www.fema.gov).

Please Note: Applicants that apply for funding under PDM and FMA MUST use FEMA's web-based electronic grants management system, known as eGrants, to submit applications. Your community should contact PEMA to gain access to the eGrants system. HMGP applications are generally administered by each state's emergency management agency. Contact PEMA if you are interested in an HMGP application or go to: https://www.pema.pa.gov/Mitigation/Grants-Projects/Pages/default.aspx

Projects must be listed in your HMP in order to have an approvable application. In addition, an HMGP Letter of Intent or Non-Disaster Grants Letter of Interest must be filled out and submitted to PEMA before an application packet will be mailed to you. Both forms are located in Appendix 19. The Letter of Interest is required for all non-disaster related funding (FMA and PDM) and the Letter of Intent is required for HMGP funding where there is an active disaster declaration.

Step 1: Review Your Mitigation Action Plan for Funding Sources.

Following the mitigation action plan review, your community will be able to identify potential mitigation activities and funding sources. The community should consult with the funding entity, state or local emergency management office, or other appropriate state or regional organization about the project's eligibility and funding cycle.

Step 2: Review the Scope and Extent of the Mitigation Action.

Once a mitigation project idea is selected, your community should then look to define a detailed scope of work that will be used as a foundation for the activity itself.

Historic and Cultural Preservation Funding Sources

Pennsylvania is home to many historic communities and properties that may be eligible for funding specific to their historic status. Though not necessarily specifically formulated for hazard mitigation, this funding is intended to safeguard the homes, businesses, and other structures that help anchor and define communities throughout the Commonwealth.

It is recommended that the community consult with the State Historic Preservation Office (SHPO) throughout the hazard mitigation planning process to assist in identifying available resources and potential funding sources, and to assist in determining which agencies or individuals have the capabilities to implement hazard mitigation actions for historic and cultural resources. Several state and federal funding sources are available for the preservation of historic and cultural resources (Appendix 18).

Step 3: Perform Project Scoping through Benefit-Cost and Economic Analysis.

Identify the costs and benefits associated with hazard mitigation strategies, measures, or projects. Two categories of analysis used in this step are: 1) benefit-cost analysis, and 2) economic analysis. Conducting benefit-cost analysis for a mitigation activity can help communities determine whether a project is worth undertaking now to avoid disaster-related damages later. Economic analysis evaluates how best to spend a given amount of money to achieve a specific goal. Determining the economic feasibility of mitigating hazards can provide decision-makers with an understanding of the potential benefits and costs of an activity, as well as a basis upon which to compare alternative projects.

If the activity requires federal funding for a structural project, your community should use FEMA's Benefit-Cost Analysis (BCA) Calculator to evaluate the appropriateness of the activity. The tool and user guide can be downloaded for free at https://www.fema.gov/benefit-cost-analysis. **A project must have a benefit-cost ratio greater than one in order to be eligible for FEMA grant funding.**

If applying for funding specific to historic and cultural resources, eligibility considerations will not be based on the same ratio, but rather the project's ability to maintain and safeguard the features that make a property historic. Communities should consult with the SHPO early on to determine if funding is available for projects that might not meet FEMA's benefit-cost ratio.

Step 4: Select the Best Measure.

In the previous step, you conducted a preliminary assessment of cost effectiveness. Based on your results, continue to develop your mitigation idea by:

- Reviewing specific program eligibility requirements.
- Comparing project ideas based on cost effectiveness and technical feasibility.
- Evaluating community support.
- Considering the effect on historic and cultural resources and community character.
- Considering funding options and associated cost shares.
- Reviewing the performance period of potential grants and ensuring that the work can be completed in the appropriate time frame.

Step 5: Community Recommendation.

Based on the steps above, your community can make solid recommendations as to whether or not a specific mitigation activity should be implemented. The community should then convene a meeting to review the issues surrounding grant applications and to share knowledge and/or resources. This process will enhance coordination and reduce competition for limited funds.

RESOURCES:

- FEMA: Hazard Mitigation Assistance Unified Guidance
- FEMA 386-6: Integrating Historic Property and Cultural Resource Considerations Into Hazard Mitigation Planning
- FEMA: Rehabilitation of High Hazard Potential Dam (HHPD) Grant Program FAQ
- PEMA Hazard Mitigation Opportunity Form
- PEMA Pre-Disaster Mitigation Grant Program (PDM): Focusing on Planning Grant Application
- PEMA Hazard Mitigation Project Officer Handbook

Appendix 1 | Model Plan Outline

1 | Introduction

1.1. Background
1.2. Purpose
1.3. Scope
1.4. Authority and Reference

2 | Community Profile

2.1. Geography and Environment
2.2. Community Facts
2.3. Population and Demographics
2.4. Land Use and Development
2.5. Data Sources and Limitations

3 | Planning Process

3.1. Update Process and Participation Summary
3.2. The Planning Team
3.3. Meetings and Documentation
3.4. Public & Stakeholder Participation
3.5. Multi-Jurisdictional Planning

4 | Risk Assessment

4.1. Update Process Summary
4.2. Hazard Identification
4.2.1. Table of Presidential Disaster Declarations
4.2.2. Summary of Hazards
4.3. Hazard Profiles
4.3.1. Hazard 1
4.3.1.1. Location and Extent
4.3.1.2. Range of Magnitude
4.3.1.3. Past Occurrence
4.3.1.4. Future Occurrence
4.3.1.5. Vulnerability Assessment

9 | Appendices

A. Bibliography
B. Local Mitigation Plan Review Tool
C. Meeting and Other Participation Documentation
D. Local Municipality Flood Vulnerability Maps
E. Critical Facilities

Appendix 2 | Community Participation Table

Purpose: To document the nature of the involvement of each jurisdiction's participation in the planning process.

Instructions: For each jurisdiction, identify its participation at planning team and public meetings and completion of any worksheets, surveys, and forms. Insert meeting titles and title of worksheets/surveys/forms in the header. Example meetings to be held could include a kick-off meeting, risk assessment meeting, mitigation strategy workshop, draft plan review meetings etc. Example worksheets/surveys/forms could include risk assessment surveys, capability assessment surveys, etc.

MUNICIPALITY	MEETINGS				WORKSHEETS/SURVEYS/FORMS			
	Planning Team Meeting 1 <date>	Planning Team Meeting 2 <date>	Planning Team Meeting 3 <date>	Planning Team Meeting 4 <date>	<Form 1>	<Form 2>	<Form 3>	<Form 4>
Example: Hazardtown	✓		✓	✓	✓		✓	✓

Appendix 3 | Capability Assessment Survey

Name: **Title:**

Jurisdiction: **Email:**

1. Planning and Regulatory Capability: Please indicate whether the following planning or regulatory tools and programs are currently in place or under development for your jurisdiction by placing an "X" in the appropriate box, followed by the date of adoption/update. Then, for each particular item in place, identify the department or agency responsible for its implementation and indicate its estimated or anticipated effect on hazard loss reduction (Supports, Neutral or Hinders) with the appropriate symbol and also indicate if there has been a change in the ability of the tool/program to result in loss reduction. Finally, please provide additional comments or explanations in the space provided.

Tool/Program	Status			Dept. / Agency Responsible	Comments:
	In Place	Date Adopted or Updated	Under Develop-ment		
EXAMPLE: Hazard Mitigation Plan	X	1/1/2006		Hazard County EMA	Interim update in 2008 revised mitigation strategy; completed one action.
Hazard Mitigation Plan					
Emergency Operations Plan					
Disaster Recovery Plan					
Evacuation Plan					
Continuity of Operations Plan					
NFIP					
NFIP-CRS					
Floodplain Regulations					

Tool/Program	Status			Dept. / Agency Responsible	Comments:
	In Place	Date Adopted or Updated	Under Develop-ment		
Floodplain Management Plan					
Zoning Regulations					
Subdivision Regulations					
Comprehensive Land Use Plan (or General, Master or Growth Mgmt. Plan)					
Open Space Management Plan (or Parks/Rec or Greenways Plan)					
Stormwater Management Plan / Ordinance					
Natural Resource Protection Plan					
Capital Improvement Plan					
Economic Development Plan					
Historic Preservation Plan					
Farmland Preservation					
Building Code					
Fire Code					
Other					

2. Administrative and Technical Capability: Please indicate whether your jurisdiction maintains the following staff members within its current personnel resources by placing an "X" in the appropriate box. Then, if YES, please identify the department or agency they work under and provide any other comments you may have in the space provided or with attachments.

Staff/Personnel Resources	Yes	No	Department / Agency	Comments
Planners (with land use / land development knowledge)				
Planners or engineers (with natural and/or human caused hazards knowledge)				
Engineers or professionals trained in building and/or infrastructure construction practices (includes building inspectors)				
Emergency manager				
Floodplain manager				
Land surveyors				
Scientists or staff familiar with the hazards of the community				
Personnel skilled in Geographic Information Systems (GIS) and/or FEMA's Hazus program				
Grant writers or fiscal staff to handle large/complex grants				
Other				

3. Financial Capability: Please indicate whether your jurisdiction has access to or is eligible to use the following local financial resources for hazard mitigation purposes (including as match funds for State of Federal mitigation grant funds). Then, identify the primary department or agency responsible for its administration or allocation and provide any other comments you may have in the space provided or with attachments.

Financial Resources	Yes	No	Department / Agency	Comments
Capital improvement programming				
Community Development Block Grants (CDBG)				
Special purpose taxes				
Gas / electric utility fees				
Water / sewer fees				
Stormwater utility fees				
Development impact fees				
General obligation, revenue, and/or special tax bonds				
Partnering arrangements or intergovernmental agreements				
Other				

4. Education and Outreach: Identify education and outreach programs and methods already in place that could be used to implement mitigation activities and communicate hazard-related information. Then, identify the primary department or agency responsible for its administration or allocation and provide any other comments you may have in the space provided or with attachments.

Program/Organization	Yes	No	Department/Agency	Comments
Firewise Communities Certification				
StormReady certification				
Natural disaster or safety related school programs				
Ongoing public education or information program (e.g. responsible water use, fire safety, household preparedness, environmental education)				
Public-private partnership initiatives addressing disaster-related issues				
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.				
Other				

5. Self-Assessment of Capability: Please provide an approximate measure of your jurisdiction's capability to effectively implement hazard mitigation strategies to reduce hazard vulnerabilities. Using the following table, please place an "X" in the box marking the most appropriate degree of capability (Limited, Moderate or High) based upon best available information and the responses provided in Sections 1-5 of this survey. For multi-jurisdictional plans, record the results of this section into the Self-Assessment Capability Matrix.

Area	Degree of Capability		
	Limited	Moderate	High
Planning and Regulatory			
Administrative and Technical			
Financial			
Education and Outreach			

Appendix 4 | Hazard Identification and Risk Evaluation Worksheet

Name: **Title:**

Jurisdiction: **Email:**

PART 1

Identified Hazards 2XXX HMP	How has the frequency of occurrence, magnitude of impact, and/or geographic extent changed in your community? NC=No Change, I=Increase, D=Decrease	Additional Comments (Please provide an explanation for any hazards marked I or D in previous column)
Natural Hazards		
Human-made Hazards		

PART II

Other Hazards: Do any of these hazards, not previously profiled in the County's hazard mitigation plan, have the potential to affect your municipality significantly? (If so, check box)

Natural

- ☐ Coastal Erosion
- ☐ Drought
- ☐ Earthquake
- ☐ Expansive Soils
- ☐ Extreme Temperature
- ☐ Flood, Flash Flood, Ice Jam
- ☐ Hailstorm
- ☐ Hurricane, Tropical Storm, Nor'easter
- ☐ Invasive Species
- ☐ Landslide
- ☐ Lightning Strike
- ☐ Pandemic and Infectious Disease
- ☐ Radon Exposure
- ☐ Subsidence, Sinkhole
- ☐ Tornado, Windstorm
- ☐ Wildfire
- ☐ Winter Storm

Human-made

- ☐ Building and Structure Collapse
- ☐ Civil Disturbance
- ☐ Cyber Terrorism
- ☐ Dam Failure
- ☐ Disorientation
- ☐ Drowning
- ☐ Environmental Hazards – Coal Mining
- ☐ Environmental Hazards – Conventional Oil and Gas Wells
- ☐ Environmental Hazards – Gas and Liquid Pipelines
- ☐ Environmental Hazards – Hazardous Materials Releases
- ☐ Environmental Hazards – Unconventional Oil and Gas Wells
- ☐ Levee Failure
- ☐ Mass Food/Animal Feed Contamination
- ☐ Nuclear Incident
- ☐ Opioid Addiction Response
- ☐ Terrorism
- ☐ Transportation Accident
- ☐ Urban Fire and Explosion
- ☐ Utility Interruption
- ☐ War and Criminal Activity

Other Comments:

Appendix 5 | Pennsylvania Presidential Disaster Declarations

Year	Declaration Date	Disaster Types	Disaster Number	Public Assistance	Individual Assistance
2020	Jan-20	Covid-19 Pandemic	4506	All 67 Counties	None
2018	Nov-18	Flood	4408	Bradford, Columbia, Lackawanna, Lycoming, Montour, Northampton, Schuylkill, Sullivan, Susquehanna, Tioga, Wyoming	None
2016	Dec-16	Flood	4292	Bradford, Centre, Lycoming, Sullivan	None
2016	Mar-16	Snow	4267	Adams, Bedford, Berks, Blair, Bucks, Chester, Cumberland, Dauphin, Fayette, Franklin, Fulton, Juniata, Lancaster, Lebanon, Lehigh, Montgomery, Northampton, Perry, Philadelphia, Schuylkill, Somerset, Westmoreland, York	None
2014	Feb-14	Severe Ice Storm	EM-3367	Bucks, Chester, Delaware, Lancaster, Montgomery, Philadelphia, York	None
2013	Oct-13	Severe Storm(s)	4149	Allegheny, Centre, Clearfield, Clinton, Crawford, Fayette, Huntingdon, Jefferson, Lawrence, Venango, Wayne	None
2012	01/13	Hurricane Sandy	4099	Bedford, Bucks, Cameron, Dauphin, Forest, Franklin, Fulton, Huntingdon, Juniata, Monroe, Northampton, Philadelphia, Pike, Potter, Somerset, Sullivan, Wyoming	None

Year	Declaration Date	Disaster Types	Disaster Number	Public Assistance	Individual Assistance
2011	09/12	Tropical Storm Lee	4030	Adams, Bedford, Berks, Bradford, Bucks, Chester, Columbia, Dauphin, Huntingdon, Juniata, Lackawanna, Lancaster, Lebanon, Luzerne, Lycoming, Mifflin, Montgomery, Montour, Northampton, Northumberland, Perry, Schuylkill, Snyder, Sullivan, Susquehanna, Tioga, Union, Wayne, Wyoming, and York.	Adams, Berks, Bradford, Bucks, Chester, Columbia, Cumberland, Dauphin, Delaware, Huntingdon, Lancaster, Lebanon, Luzerne, Lycoming, Monroe, Montgomery, Montour, Northampton, Northumberland, Perry, Philadelphia, Schuylkill, Snyder, Sullivan, Susquehanna, Union, Wyoming, and York.
2011	09/03	Hurricane Irene	4025	Bucks, Chester, Delaware, Lehigh, Luzerne, Monroe, Montgomery, Northampton, Philadelphia, Pike, Sullivan, Susquehanna, Wayne, and Wyoming.	Bucks, Chester, Delaware, Lehigh, Luzerne, Monroe, Montgomery, Northampton, Philadelphia, Sullivan, and Wyoming.
2011	07/13	Severe Storms and Flooding	4003	Bradford, Lycoming, Sullivan, Tioga, and Wyoming County	None
2010	04/16	Severe Winter Storms and Snowstorms	1898	Adams, Allegheny, Armstrong, Beaver, Bedford, Blair, Butler, Cambria, Chester, Cumberland, Dauphin, Delaware, Fayette, Franklin, Fulton, Greene, Huntingdon, Indiana, Juniata, Lancaster, Lebanon, Perry, Philadelphia, Somerset, Westmoreland, York	None
2007	02/23	Severe Storms and Flooding	1684	Bradford, Lackawanna, Luzerne, Schuylkill, Sullivan, Susquehanna, Wayne, Wyoming	None

Year	Declaration Date	Disaster Types	Disaster Number	Public Assistance	Individual Assistance
2006	06/30	Severe Storms, Flooding, and Mudslides	1649	Bradford, Bucks, Columbia, Luzerne, Northampton, Northumberland, Pike, Susquehanna, Wyoming	Berks, Bradford, Carbon, Chester, Dauphin, Franklin, Lackawanna, Lancaster, Lebanon, Luzerne, Monroe, Montgomery, Montour, Pike, Schuylkill, Susquehanna, Wayne, Wyoming
2005	04/14	Severe Storms and Flooding	1587	None	Bradford, Bucks, Columbia, Luzerne, Monroe, Northampton, Pike, Wayne, Wyoming

Year	Declaration Date	Disaster Types	Disaster Number	Public Assistance	Individual Assistance
2004	09/19	Tropical Depression Ivan	1557	Allegheny, Armstrong, Beaver, Bedford, Blair, Bradford, Bucks, Butler, Cameron, Carbon, Centre, Clarion, Clearfield, Clinton, Columbia, Cumberland, Dauphin, Elk, Franklin, Fulton, Green, Huntingdon, Indiana, Jefferson, Juniata, Lackawanna, Lawrence, Lebanon, Lehigh, Luzerne, Lycoming, Mifflin, Monroe, Montour, Northampton, Northumberland, Perry, Pike, Potter, Schuylkill, Snyder, Somerset, Sullivan, Susquehanna, Tioga, Union, Washington, Wayne, Westmoreland, Wyoming and York for debris removal and emergency protective measures and Allegheny, Armstrong, Beaver, Bedford, Blair, Bradford, Bucks, Butler, Cameron, Carbon, Centre, Clarion, Clearfield, Clinton, Columbia, Cumberland, Dauphin, Fulton, Greene, Huntingdon, Indiana, Jefferson, Juniata, Lackawanna, Lebanon, Luzerne, Lycoming, Mifflin, Monroe, Montour, Northampton, Northumberland, Perry, Pike, Schuylkill, Snyder, Susquehanna, Tioga, Union, Washington, Wayne, Westmoreland, Wyoming, York	Allegheny, Armstrong, Beaver, Bedford, Blair, Bradford, Bucks, Butler, Cameron, Carbon, Centre, Chester, Clarion, Clearfield, Clinton, Columbia, Crawford, Cumberland, Dauphin, Delaware, Elk, Franklin, Fulton, Green, Huntingdon, Indiana, Jefferson, Juniata, Lackawanna, Lawrence, Lebanon, Lehigh, Luzerne, Lycoming, Mifflin, Monroe, Montgomery, Montour, Northampton, Northumberland, Perry, Philadelphia, Pike, Potter, Schuylkill, Snyder, Somerset, Sullivan, Susquehanna, Tioga, Union, Washington, Wayne, Westmoreland, Wyoming, York

Year	Declaration Date	Disaster Types	Disaster Number	Public Assistance	Individual Assistance
2004	09/19	Severe Storms and Flooding associated with Tropical Depression Frances	1555	None	Beaver, Bedford, Blair, Butler, Crawford, Erie, Huntingdon, Lawrence, Warren, Washington
2004	08/06	Severe Storms and Flooding	1538	None	Delaware, Montgomery, Philadelphia
2003	09/26	Tropical Storms Henri and Isabel, and Related Severe Storms and Flooding	1497	None	Chester
2003	08/23	Severe Storms, Tornadoes, and Flooding	1485	Clarion, Crawford, Forest, Lackawanna, Lawrence, Mercer, McKean, Potter, Tioga, Venango, Warren, Wayne, Wyoming	Blair, Crawford, Lackawanna, Lawrence, McKean, Mercer, Potter, Tioga, Venango, Warren, Wayne
2001	06/22	Tropical Storm Allison	1383	None	Bucks, Montgomery
1999	09/22	Tropical Depression Dennis and Flash Flooding	1298	None	Dauphin, Lycoming, Northumberland, Snyder, Union
1999	09/18	Hurricane Floyd	1294	Bucks, Chester, Delaware, Lancaster, Montgomery, Philadelphia, York	Bucks, Chester, Delaware, Lancaster, Montgomery, Philadelphia, York
1999	09/01	Severe Storms and Flooding	1289	None	McKean
1998	06/08	Flooding, Severe Storms, and Tornadoes	1219	None	Allegheny, Beaver, Berks, Pike, Somerset, Susquehanna, Wyoming

Year	Declaration Date	Disaster Types	Disaster Number	Public Assistance	Individual Assistance
Public Assistance/Individual Assistance data not available prior to 1998					
1996	12/23	Severe Storms/Flooding	1149	Tioga	
1996	09/13	Hurricane Fran	1138	Cumberland, Huntingdon, Juniata, Mifflin, Montgomery, Perry	
1996	07/26	Flooding	1330	Armstrong, Blair Cambria, Clarion, Clearfield, Crawford, Greene, Indiana, Jefferson, Mercer, Venango	
1996	06/18	Flooding	1120	Adams, Beaver, Bedford, Bucks, Cambria, Crawford, Franklin, Huntingdon	
1996	01/21	Flooding	1093	Statewide	
1996	01/13	Blizzard	1085	Statewide	
1994	03/10	Winter Storm, Severe Storm	1015	No County Assistance Data Available	
1986	06/05	Severe Storms, Flooding	766	Allegheny	
1985	11/09	Severe Storms, Flooding	754	Allegheny, Fayette, Greene, Somerset, Washington, Westmoreland	
1985	10/08	Hurricane Gloria	745	Lackawanna, Luzerne, Monroe, Wayne, Wyoming, Susquehanna	
1985	06/03	Severe Storms, High Winds, Tornadoes	737	Erie, Crawford, Warren, McKean, Mercer, Venango, Forest, Butler, Beaver, Clearfield, Lycoming, Union, Northumberland	
1984	08/27	Severe Storms, Flooding	721	Armstrong, Allegheny, McKean, Westmoreland, Bedford, Blair, Somerset	
1981	06/15	Severe Storms, Flooding	641	Venango, Clarion, Mercer, Jefferson, Crawford	
1980	08/19	Severe Storms, Flooding	629	Armstrong, Butler, Clarion	
1977	07/21	Severe Storms, Flooding	537	Bedford, Cambria, Clearfield, Crawford, Indiana, Jefferson, Somerset, Westmoreland	

Year	Declaration Date	Disaster Types	Disaster Number	Public Assistance	Individual Assistance
1976	10/20	Severe Storms, Flooding	523	Adams, Bradford, Columbia, Cumberland, Dauphin, Franklin, Juniata, Lackawanna, Lancaster, Lebanon, Luzerne, Mifflin, Northumberland, Perry, Schuylkill, Snyder, Sullivan, Susquehanna, Wayne, Wyoming, York	
1976	07/07	High Winds, Flash Floods	513	Tioga	
1975	09/26	Severe Storms, Heavy Rains, Flooding	485	Adams, Berks, Bradford, Centre, Clinton, Columbia, Cumberland, Dauphin, Franklin, Juniata, Lackawanna, Lancaster, Lebanon, Luzerne, Lycoming, Mifflin, Montour, Northampton, Perry, Potter, Schuylkill, Snyder, Sullivan, Susquehanna, Tioga, Union, Wayne, Wyoming, York	
1973	07/17	Severe Storms, Flooding	400	Berks, Bucks, Chester, Columbia, Delaware, Lancaster, Monroe, Montgomery, Northampton, Wayne, Westmoreland	
1972	09/28	Heavy Rains, Flooding	355	Indiana	
1972	06/23	Tropical Storm Agnes	340	All 67 Counties	
1971	09/18	Floods	312	Bucks, Chester, Delaware, Montgomery, Philadelphia	
1969	08/19	Severe Storms, Flooding	273	Carbon, Monroe, Schuylkill	
1965	08/18	Water Shortage	206	Numerous Communities Statewide	
1959	01/23	Flood	89	Luzerne (Pittston)	
1956	08/09	Storm	61	Beaver, Greene, Washington	
1956	05/21	Severe Storms	58	Western Counties	
1956	03/15	Flood	51	Warren, Venango	
1955	08/20	Floods, Rains	40	Northeastern Counties	

Sources: FEMA, PEMA

Appendix 6 | Risk Assessment Hazard Descriptions

This list was first developed from the 2007 Edition of the National Fire Protection Association's NFPA 1600: Standard on Disaster/Emergency Management and Business Continuity Programs in addition to hazards identified in existing HMPs in Pennsylvania. Some hazards with similar impacts and mitigation measures have been combined for the purposes of this list. The individual hazards constituting such combined hazards remain listed within the combined hazard descriptions in bulleted form. Such individual hazards may be extracted and addressed separately at the discretion of the planning team. In 2020 the list was updated to cite more current references and to remove several hazards not found in Pennsylvania including avalanche; dust and sandstorm; tsunami; and volcano.

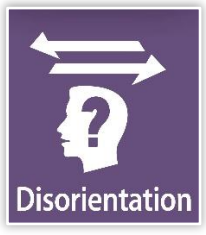
Natural Hazards

Hazard	Hazard Description
Coastal Erosion 	Coastal erosion is a natural coastal process in which sediment outflow exceeds sediment inflow. This movement of sediment can be caused by large storms, flooding, strong wave action, seal level rise, or human activities. Coastal erosion can take place very slowly, with the shoreline shifting only inches to a foot per year (chronic erosion); or more rapidly, with changes exceeding ten feet per year due to a single storm or series of storms (episodic erosion). Apart from portions of Erie County, coastal erosion is not a hazard for communities in Pennsylvania.
Drought 	Drought is defined as a deficiency of precipitation experienced over an extended period of time, usually a season or more. Droughts increase the risk of other hazards, like wildfires, flash floods, and landslides or debris flows. This hazard is of particular concern in Pennsylvania due to the prevalence of farms and other water-dependent industries, water-dependent recreation uses, and residents who depend on wells for drinking water.
Earthquake 	An earthquake is the motion or trembling of the ground produced by sudden displacement of rock usually within the upper 10-20 miles of the Earth's crust. Earthquakes result from crustal strain, volcanism, landslides, or the collapse of underground caverns. Earthquakes can affect hundreds of thousands of square miles, cause damage to property measured in the tens of billions of dollars, result in loss of life and injury to hundreds of thousands of persons, and disrupt the social and economic functioning of the affected area.
Expansive Soils 	Clay soils have the potential to shrink and swell when they become wetted or dried. Expansive soils do not change size quickly, but over time can result in significant movement that can damage supply lines (e.g. roads, power lines, railways, bridges, etc.) and structures that lack proper design.

Hazard	Hazard Description
Extreme Temperature 	Extreme heat often results in the highest number of annual deaths of all weather-related hazards. In most of the United States, extreme heat is defined as a long period (2 to 3 days) of high heat and humidity with temperatures above 90 degrees. (Ready.gov, 2018). Extremely cold air comes every winter in at least part of the country and affects millions of people across the United States. The arctic air, together with brisk winds, can lead to dangerously cold wind chill values. People exposed to extreme cold are susceptible to frostbite and hypothermia in a matter of minutes.
Flood, Flash Flood, Ice Jam 	Flooding is the temporary condition of partial or complete inundation of normally dry land, and it is the most frequent and costly of all natural hazards in Pennsylvania. Flash flooding is usually a result of heavy localized precipitation falling in a short time period over a given location, often along mountain streams and in urban areas where much of the ground is covered by impervious surfaces. Winter flooding can include ice jams which occur when warm temperatures and heavy rain cause snow to melt rapidly. Snow melt combined with heavy rains can cause frozen rivers to swell, which breaks the ice layer on top of a river. The ice layer often breaks into large chunks, which float downstream, piling up in narrow passages and near other obstructions such as bridges and dams.
Hailstorm 	Hailstorms occur when ice crystals form within a low-pressure front due to the rapid rise of warm air into the upper atmosphere and the subsequent cooling of the air mass. Frozen droplets gradually accumulate on the ice crystals until, having developed sufficient weight, they fall as precipitation in the form of balls or irregularly shaped masses of ice greater than 0.75 inches in diameter. Hailstorms can cause significant damage to homes, vehicles, livestock, and people.
Hurricane, Tropical Storm, Nor'easter 	Hurricanes, tropical storms, and nor'easters are classified as cyclones and are any closed circulation developing around a low-pressure center in which the winds rotate counterclockwise (in the Northern Hemisphere) and whose diameter averages 10-30 miles across. Potential threats from hurricanes include powerful winds, heavy rainfall, storm surges, coastal and inland flooding, rip currents, tornadoes, and landslides. The Atlantic hurricane season runs from June 1 to November 30.

Hazard	Hazard Description
Invasive Species 	An invasive species is a species that is not indigenous to the ecosystem under consideration and whose introduction causes or is likely to cause economic, environmental, or human harm. These species can be any type of organism: plant, fish, invertebrate, mammal, bird, disease, or pathogen.
Landslide 	In a landslide, masses of rock, earth or debris move down a slope. Landslides can be caused by a variety of factors, including earthquakes, storms, fire, and human modification of land. Areas that are prone to landslide hazards include previous landslide areas, areas on or at the base of slopes, areas in or at the base of drainage hollows, developed hillsides with leach field septic systems, and areas recently burned by forest or brush fires.
Lightning Strike 	Lightning is a giant spark of electricity resulting from the build-up of positive and negative charges within a thunderstorm. The flash or "bolt" of light can occur within the thunderstorm cloud or between the cloud and the ground. Lightning is a leading cause of injury and death from weather-related hazards. Although most lightning victims survive, people struck by lightning often report a variety of long-term, debilitating symptoms.
Pandemic and Infectious Disease 	A pandemic is a global outbreak of disease that occurs when a new virus emerges in the human population, spreading easily in a sustained manner, and causing serious illness. An epidemic describes a smaller-scale infectious outbreak, within a region or population, that emerges at a disproportional rate. Infectious disease outbreaks may be widely dispersed geographically, impact large numbers of the population, and could arrive in waves lasting several months at a time.
Radon Exposure 	Radon is a radioactive gas produced by the breakdown of uranium in soil and rock that can lead to lung cancer in people exposed over a long period of time. Most exposure comes from breathing in radon gas that enters homes and buildings through foundation cracks and other openings. According to the DEP, approximately 40% of Pennsylvania homes have elevated radon levels.

Hazard	Hazard Description
Subsidence, Sinkhole 	Land subsidence is a gradual settling or sudden sinking of the ground surface due to the movement of subsurface materials. A sinkhole is a subsidence feature resulting from the sinking of surficial material into a pre-existing subsurface void. Subsidence and sinkholes are geologic hazards that can impact roadways and buildings and disrupt utility services. Subsidence and sinkholes are most common in areas underlain by limestone and can be exacerbated by human activities such as water, natural gas, and oil extraction.
Tornado, Windstorm 	A tornado is a narrow, violently rotating column of air that extends from the base of a thunderstorm to the ground. About 1,250 tornadoes hit the U.S. each year, with about 16 hitting Pennsylvania. Damaging winds exceeding 50-60 miles per hour can occur during tornadoes, severe thunderstorms, winter storms, or coastal storms. These winds can have severe impacts on buildings, pulling off the roof covering, roof deck, or wall siding and pushing or pulling off the windows.
Wildfire 	A wildfire is an unplanned fire that burns in a natural area. Wildfires can cause injuries or death and can ruin homes in their path. Wildfires can be caused by humans or lightning, and can happen anytime, though the risk increases in period of little rain. In Pennsylvania, 98% of wildfires are caused by people.
Winter Storm 	A winter storm is a storm in which the main types of precipitation are snow, sleet, or freezing rain. A winter storm can range from a moderate snowfall or ice event over a period of a few hours to blizzard conditions with wind-driven snow that lasts for several days. Most deaths from winter storms are not directly related to the storm itself, but result from traffic accidents on icy roads, medical emergencies while shoveling snow, or hypothermia from prolonged exposure to cold.
Building and Structure Collapse 	Buildings and other engineered structures, including bridges, may collapse if their structural integrity is compromised, especially due to effects from other natural or human-made hazards. Older buildings or structures, structures that are not built to standard codes, or structures that have been weakened are more susceptible to be affected by these hazards.

Hazard	Hazard Description
Civil Disturbance 	A civil disturbance is defined by FEMA as a civil unrest activity (such as a demonstration, riot, or strike) that disrupts a community and requires intervention to maintain public safety
Cyber Terrorism 	Cyber terrorism refers to acts of terrorism committed using computers, networks, and the Internet. The most widely cited definition comes from Denning's Testimony before the Special Oversight Panel on Terrorism: "Cyberterrorism…is generally understood to mean unlawful attacks and threats of attack against computers, networks, and the information stored therein when done to intimidate or coerce a government or its people in furtherance of political or social objectives. Further, to qualify as cyberterrorism, an attack should result in violence against persons or property, or at least cause enough harm to generate fear."
Dam Failure 	Dam failure is the uncontrolled release of water (and any associated wastes) from a dam. This hazard often results from a combination of natural and human causes, and can follow other hazards such as hurricanes, earthquakes, and landslides. The consequences of dam failures can include property and environmental damage and loss of life.
Disorientation 	Large numbers of people are attracted to Pennsylvania's rural areas for recreational purposes such as hiking, camping, hunting, and fishing. As a result, people can become lost or trapped in remote and rugged wilderness areas. Search and rescue may be required for people who suffer from medical problems or injuries and those who become accidentally or intentionally disoriented. Search and rescue efforts are focused in and around state forest and state park lands.

Hazard	Hazard Description
Drowning 	Drowning is death from suffocation, typically associated with swimming, fishing, boating or bridge accidents, or suicide. It can be a significant hazard in communities with numerous residential pools or water bodies (e.g. ponds, lakes, rivers, etc...) and extensive outdoor recreational activity. Drowning rates are particularly high for children ages 1-14. The Centers for Disease Control and Prevention estimates that drowning is the second leading cause of injury death (after motor vehicle crashes) among children ages 1-14.
Environmental Hazards – Coal Mining 	Major impacts from coal mining include subsidence, landscape changes, and the chemical degradation of surface and subsurface waters. In addition, active and abandoned mines can result in injury and loss of human life. In active mines, workers can be injured or killed by mine collapse, entrapment, poisonous gases, inundation, explosions, fires, equipment malfunction, or improper ventilation. In abandoned mines, causes of injury or death include falling and drowning.
Environmental Hazards – Conventional Oil and Gas Wells 	Many of the hazards associated with conventional oil and gas extraction relate to the contamination of surface and subsurface waters. Abandoned oil and gas wells that are not properly plugged can contaminate groundwater and pollute domestic drinking water wells. In addition, surface waters and soil can be contaminated by brine, a salty wastewater product of oil and gas well drilling, or by oil spills. This pollution can degrade public drinking water supplies and disrupt aquatic ecosystems.
Environmental Hazards – Gas and Liquid Pipelines 	Pipeline failures are low-probability, potentially high-consequence events. Although gas and liquid pipeline failures are infrequent, the hazardous and inflammable materials released by these events can pose a significant threat to public safety and the built and natural environment. Explosions associated with pipeline failures, for example, can cause severe injury to nearby residents and destroy homes and other property.
Environmental Hazards – Hazardous Materials Releases 	Hazardous material releases can contaminate air, water, and soils and have the potential to cause injury or death. Dispersion can take place rapidly when transported by water and wind. While often accidental, releases can occur as a result of human carelessness, intentional acts, or natural hazards. When caused by natural hazards, these incidents are known as secondary events.

Hazard	Hazard Description
Environmental Hazards – Unconventional Oil and Gas Wells 	In addition to the hazards associated with conventional oil and gas extraction, potential hazards from Marcellus Shale gas wells include surface water depletion affecting drinking water supplies and aquatic ecosystems; contaminated surface and groundwater resulting from hydraulic fracturing and the recovery of contaminated hydraulic fracturing fluid; and mishandling of solid toxic waste.
Levee Failure 	A levee is a human-made structure, usually an earthen embankment, designed and constructed in accordance with sound engineering practices to contain, control, or divert the flow of water to provide protection from temporary flooding (FEMA, 2016). A levee failure or breach occurs when a levee fails to prevent flooding on the landside of the levee. The consequences of a sudden levee failure can be catastrophic, with the resulting flooding causing loss of life, emergency evacuations, and significant property damage.
Mass Food/Animal Feed Contamination 	Mass food or animal feed contamination hazards occur when food or food sources are contaminated with pathogenic bacteria, viruses, or parasites, or with chemical or natural toxins. Mass food contamination can occur during the production, processing, or distribution of foods. Incidences of mass contamination may lead to foodborne illnesses and/or interruptions in the food supply.
Nuclear Incident 	Nuclear explosions can cause significant damage and casualties from blast, heat, and radiation. The primary concern following a nuclear accident or nuclear attack is the extent of radiation, inhalation, and ingestion of radioactive isotopes which can cause acute health effects (e.g. death, burns, severe impairment), chronic health effects (e.g. cancer), and psychological effects.
Opioid Addiction Response 	Opioid addiction occurs when an individual becomes physically dependent on opioids, which include opiates and narcotics. Opioids are a synthetic substance found in certain prescription pain medications: morphine, codeine, methadone, oxycodone, hydrocodone, fentanyl, and hydromorphone, and street drugs like heroine. Opioids block the body's ability to feel pain and can create a sense of euphoria. Individuals often build a tolerance to opioid drugs, which leads them to take more of the medication than originally prescribed.

Hazard	Hazard Description
Terrorism 	Terrorism is use of force or violence against persons or property with the intent to intimidate or coerce. Acts of terrorism include threats of terrorism; assassinations; kidnappings; hijackings; bomb scares and bombings; cyber-attacks (computer-based); and the use of chemical, biological, nuclear and radiological weapons. Cyber-attacks have become an increasingly pressing concern.
Transportation Accident 	Transportation accidents are technological hazards involving the nation's system of land, sea, and air transportation infrastructure. A flaw or breakdown in any component of this system can and often does result in a major disaster involving loss of life, injuries, property and environmental damage, and economic consequences.
Urban Fire and Explosion 	Urban fire and explosion hazards include vehicle and building/structure fires as well as overpressure rupture, overheat, or other explosions that do not ignite. This hazard occurs in denser, more urbanized areas statewide and most often occurs in residential structures. Nationally, fires cause over 3,000 deaths and approximately 16,000 injuries each year.
Utility Interruption 	Utility interruption hazards are hazards that impair the functioning of important utilities in the energy, telecommunications, public works, and information network sectors. Utility interruption hazards include the following: • Geomagnetic Storms • Fuel or Resource Shortage • Electromagnetic Pulse • Information Technology Failure • Ancillary Support Equipment • Public Works Failure • Telecommunications System Failure • Transmission Facility or Linear Utility Accident • Major Energy, Power, Utility Failure

Hazard	Hazard Description
War and Criminal Activity 	War and criminal activity hazards are intentional acts of violence, damage to property, and other criminal activities. This category specifically includes the following hazards: • War, Enemy Attack; foreign attack on territory of the United States. • Disinformation, Sabotage; intentionally spread inaccurate information, for example; interfering or impairing an operator's management or control of an organization. • Criminal Activity; lawlessness, acts committed for which punishment is imposed upon conviction after due process. • Physical or Information Security Breach; contravening security and confidentiality laws and procedures; burglary, unreasonable search and seizure, for example. • Workplace, School Violence; some environments are more likely than others to experience violence including occupations involving contact with the public. • Harassment; a pattern of conduct that causes substantial emotional distress with no legal purpose. • Discrimination; widespread treatment based on class, category, or prejudice rather than merit, applies extensively to civil and labor law.

Appendix 7 | Mitigation Strategy 5-Year Mitigation Plan Review

Purpose: To fulfill requirement that plan maintenance from previous plan has been completed and to obtain early feedback from the local mitigation planning committee on the plan update to incorporate into the update process.

Instructions: Complete the Goal and Objective Review Worksheet and Mitigation Action Plan Review Worksheet on the next two pages keeping the following questions in mind:

- Do the goals, objectives, and actions address current and expected conditions?
- Go through each goal and objective to determine: Should goal be carried forward into updated plan? Should goal be changed based on current conditions in community? Should goal be discontinued and if so why?
- Progress on actions should be noted. For each action the following questions should be answered: What is status? What progress has been made? Should action be continued in updated plan? Should action be discontinued and if so why?
- Has the nature or magnitude of hazard risk changed?
- Are current resources adequate to implement the Plan?
- Should additional local resources be committed to address identified hazard threats?
- Are there any issues that have limited the current implementation schedule?
- Has the implementation of identified mitigation actions resulted in expected outcomes?
- Has the Mitigation Planning Committee measured the effectiveness of completed hazard mitigation projects in terms of specific dollar losses avoided?
- Did the jurisdictions, agencies and other partners participate in the plan implementation process as proposed?
- Other?

Before completing the worksheets, the group may wish to discuss the above questions in a round robin format, using a flip chart. The questions are standard questions; however, it is important to check the existing hazard mitigation plan maintenance section to see if there are additional questions that need to be considered.

Goal and Objective Review Worksheet

Instructions: Write each goal and objective identified in the existing hazard mitigation plan. Use the comment boxes to provide feedback or to suggest modification of any of the proposed goals or objectives. You may suggest additional objectives below each goal, or new goals and objectives on the last page of this exercise.

Proposed Goals and Objectives		Comments
GOAL 1		
Objective A		
Objective B		
Objective C		
Objective (New)		
GOAL 2		
Objective A		
Objective B		
Objective C		
Objective (New)		
GOAL 3		
Objective A		
Objective B		
Objective C		
Objective (New)		

Proposed Goals and Objectives		Comments
GOAL 4		
Objective A		
Objective B		
Objective C		
Objective (New)		
GOAL 5		
Objective A		
Objective B		
Objective C		
Objective (New)		
NEW GOAL?		
Objective		
Objective		
Objective		

Mitigation Action Plan Review Worksheet

Instructions: List each mitigation action from the existing hazard mitigation plan and identify its status as "No Progress / Unknown," "In Progress / Not Yet Complete," "Continuous," "Completed," or "Discontinued." Include review comments for each action.

Existing Mitigation Action	Status					Review Comments
	No Progress / Unknown	In Progress / Not Yet Complete	Continuous	Completed	Discontinued	

Appendix 8 | Hazard Prioritization Matrix

Purpose: To determine the Risk Factor (RF) for each hazard.

Instructions: Use the criteria in the Summary of Risk Factor (RF) Approach table of Section 4.3 of this SOG to assign a value (1-4) in each risk assessment category for each hazard. Then calculate the risk factor, use the methodology described in Section 4.3, by multiplying the value assigned to each risk assessment category by the weighing factor for each category agreed upon by the HMPT. The sum of all five categories equals the final RF value, as demonstrated in the example equation:

RF Value = [(Probability x .30) + (Impact x .30) +
(Spatial Extent x .20) + (Warning Time x .10) + (Duration x .10)]

RISK	HAZARD NATURAL (N) or HUMAN-MADE (M)	RISK ASSESSMENT CATEGORY					RISK FACTOR (RF)
		PROBABILITY	IMPACT	SPATIAL EXTENT	WARNING TIME	DURATION	
High	EX.: Flood, Flash Flood, Ice Jam (N)	3	2	3	3	3	2.7
High							
High							
High							
High							
Moderate							
Moderate							
Moderate							
Moderate							
Moderate							
Low							
Low							
Low							
Low							
Low							

Appendix 9 | Mitigation Strategy Technique Matrix

Purpose: To cross-reference possible categories of mitigation actions with hazards that pose the greatest threat (high and moderate risk hazards).

Instructions: Complete the table below by listing high and moderate risk hazards in first column (add rows if necessary). Then, place a check mark where a specific class of mitigation techniques may be possible to mitigate against a particular hazard. Finally, note how the class of techniques can be used to mitigate threats against new and existing buildings/infrastructure. See Section 6.3 of this guide for additional guidance.

HAZARD	MITIGATION TECHNIQUE			
	Local Plans and Regulations	Structural and Infrastructure	Natural Systems Protection	Education and Awareness
Description of how technique can protect new and existing buildings and infrastructure?				

Appendix 10 | Mitigation Action Assessment

Purpose: To evaluate and prioritize each hazard mitigation action.

Instructions: Utilize the Multi-Objective Mitigation Action Prioritization Method, developed by the State Hazard Mitigation Planning Team to prioritize and score hazard mitigation actions.

MULTI-OBJECTIVE MITIGATION ACTON PRIORITIZATION METHOD		
Mitigation Action Ranking Criteria	**Criteria Description**	**Weight Value**
Effectiveness	The extent to which an action reduces the vulnerability of people and property.	**20%**
Efficiency	The extent to which time, effort, and cost is well used as a means of reducing vulnerability.	**30%**
Multi-Hazard Mitigation	The action reduces vulnerability for more than one hazard.	**20%**
Addresses High Risk Hazard	The action reduces vulnerability for people and property from a hazard(s) identified as high risk.	**15%**
Addresses Critical Communications/Critical Facilities	The action pertains to the maintenance of critical functions and structures such as transportation, supply chain management, data circuits, etc.	**15%**

Applying these mitigation action assessment criteria will result in an overall score between 0 and 3 where a score of 0 is of the lowest priority and a score of 3 is of the highest priority. Mitigation actions can be categorized as High, Medium, and Low as follows:

Prioritization Category	Prioritization Score
High	2.5 - 3.0
Medium	1.9 – 2.4
Low	0 – 1.8

SAMPLE MULTI-OBJECTIVE MITIGATION ACTION PRIORITIZATION MATRIX						
MITIGATION ACTION	EFFECTIVENESS (20%)	EFICIENCY (30%)	MULTI-HAZARD MITIGATION (20%)	ADDRESS HIGH RISK HAZARD (15%)	ADDRESS CRITICAL COMMUNICATION FACILITIES (15%)	TOTAL SCORE
Insert Mitigation action here	*3*	*2.5*	*2*	*3*	*2.5*	*2.6*
Insert Mitigation action here	*2*	*2*	*1.5*	*2.5*	*2.5*	*2.1*
Insert Mitigation action here	*1.5*	*2*	*2*	*2*	*1.5*	*1.8*

Appendix 11 | Mitigation Strategy Action Plan Template

Purpose: To have a standardized format for mitigation action plans.

Instructions: Complete a table for each action, assigning each action with an action number and listing the community or communities that identified the action. See Section 6.4 of this guide for additional guidance.

Community(ies):	**Action:**
Action No:	
Mitigation Technique Category	
Hazard(s) Addressed	
Priority (High, Medium, Low)	
Estimated Cost	
Potential Funding Sources	
Lead Agency/Department	
Implementation Schedule	

Appendix 12 | Jurisdiction Action Matrix

Purpose: To document the mitigation actions numbers for mitigation actions for each jurisdiction.

Instructions: List each jurisdiction and the mitigation action numbers for each mitigation action the jurisdiction identified during the planning process. Mitigation action numbers should be obtained from the Mitigation Action Plan.

Community Name	Mitigation Action Number(s)

Appendix 13 | Adoption Resolutions

<County Name> <Year> Hazard Mitigation Plan

County Adoption Resolution

Resolution No. _____
<County Name>, Pennsylvania

WHEREAS, the municipalities of <County Name>, Pennsylvania are most vulnerable to natural and human-made hazards which may result in loss of life and property, economic hardship, and threats to public health and safety, and

WHEREAS, Section 322 of the Disaster Mitigation Act of 2000 (DMA 2000) requires state and local governments to develop and submit for approval to the President a mitigation plan that outlines processes for identifying their respective natural hazards, risks, and vulnerabilities, and

WHEREAS, <County Name> acknowledges the requirements of Section 322 of DMA 2000 to have an approved Hazard Mitigation Plan as a prerequisite to receiving post-disaster Hazard Mitigation Grant Program funds, and

WHEREAS, the <County Name> <Year> Hazard Mitigation Plan has been developed by the <Name of County Department> and the <Name of County Department> in cooperation with other county departments, local municipal officials, and the citizens of <County Name>, and

WHEREAS, a public involvement process consistent with the requirements of DMA 2000 was conducted to develop the <County Name> <Year> Hazard Mitigation Plan, and

WHEREAS, the <County Name> <Year> Hazard Mitigation Plan recommends mitigation activities that will reduce losses to life and property affected by both natural and human-made hazards that face the County and its municipal governments,

NOW THEREFORE BE IT RESOLVED by the governing body for the County of <County Name> that:

- The <County Name> <Year> Hazard Mitigation Plan is hereby adopted as the official Hazard Mitigation Plan of the County, and
- The respective officials and agencies identified in the implementation strategy of the <County Name> <Year> Hazard Mitigation Plan are hereby directed to implement the recommended activities assigned to them.

ADOPTED, this _____ day of _____, <Year>

ATTEST: <County Name> **COMMISSIONERS**

_____ By _____

By _____

<County Name> <Year> Hazard Mitigation Plan

Municipal Adoption Resolution

Resolution No. _____

<Borough/Township of Municipality Name>, <County Name>, Pennsylvania

WHEREAS, the *<Borough/Township of Municipality Name>*, <County Name>, Pennsylvania is most vulnerable to natural and human-made hazards which may result in loss of life and property, economic hardship, and threats to public health and safety, and

WHEREAS, Section 322 of the Disaster Mitigation Act of 2000 (DMA 2000) requires state and local governments to develop and submit for approval to the President a mitigation plan that outlines processes for identifying their respective natural hazards, risks, and vulnerabilities, and

WHEREAS, the *<Borough/Township of Municipality Name>* acknowledges the requirements of Section 322 of DMA 2000 to have an approved Hazard Mitigation Plan as a prerequisite to receiving post-disaster Hazard Mitigation Grant Program funds, and

WHEREAS, the <County Name> <Year> Hazard Mitigation Plan has been developed by the <Name of County Department> and the <Name of County Department> in cooperation with other county departments, and officials and citizens of *<Borough/Township of Municipality Name>*, and

WHEREAS, a public involvement process consistent with the requirements of DMA 2000 was conducted to develop the <County Name> <Year> Hazard Mitigation Plan, and

WHEREAS, the <County Name> <Year> Hazard Mitigation Plan recommends mitigation activities that will reduce losses to life and property affected by both natural and human-made hazards that face the County and its municipal governments,

NOW THEREFORE BE IT RESOLVED by the governing body for the *<Borough/Township of Municipality Name>*:

- The <County Name> <Year> Hazard Mitigation Plan is hereby adopted as the official Hazard Mitigation Plan of the *<Borough/Township>*, and
- The respective officials and agencies identified in the implementation strategy of the <County Name> <Year> Hazard Mitigation Plan are hereby directed to implement the recommended activities assigned to them.

ADOPTED, this _____ day of _____, <Year>

ATTEST:

_____

<MUNICIPALITY>

By _____

By _____ _

Appendix 14 | Risk Assessment Hazard Data Sources

Natural Hazards

Hazard	General Information/Maps/Data Sources	Previous Occurrences	Risk and Vulnerability
Coastal Erosion	http://woodshole.er.usgs.gov/project-pages/cvi/ http://www.floods.org/PDF/NAI/PA_bluff_erosion.pdf	http://www.dep.state.pa.us/river/reference/brha.htm	
Drought	https://www.dep.pa.gov/Business/Water/PlanningConservation/Drought/Pages/default.aspxhttps://www.drought.gov/drought/ http://www.agcensus.usda.gov/Publications/2007/Online_Highlights/County_Profiles/Pennsylvania/index.asp http://www.dcnr.state.pa.us/topogeo/groundwater/pagwis/downloads/index.htm	https://www.ncdc.noaa.gov/stormevents/ https://www.drought.gov/drought/search/data	https://www.drought.gov/drought/data-maps-tools/current-conditions
Earthquake	https://www.millersville.edu/esci/geology/earthquake.php http://www.millersville.edu/esci/geology/img/quakehazardzones.jpg https://www.spc.noaa.gov/efscale/	http://www.dcnr.state.pa.us/topogeo/hazards/earthquakes.aspx https://earthquake.usgs.gov/data/shakemap/	
Expansive Soils	http://soildatamart.nrcs.usda.gov/State.aspx http://soils.usda.gov/use/risks.html	http://geology.com/articles/expansive-soil.shtml	

Hazard	General Information/Maps/Data Sources	Previous Occurrences	Risk and Vulnerability
Extreme Temperatures	https://www.fema.gov/media-library-data/20130726-1549-20490-2128/natural_hazards_2.pdf https://www.weather.gov/safety/heat-index	https://www.ncdc.noaa.gov/stormevents/ http://www.climate.psu.edu/data/city_information/index.php?city=phl&page=mae&type=big7 http://climate.met.psu.edu/data/events/	
Flood, Flash Flood, Ice Jams	http://msc.fema.gov/ https://icejam.sec.usace.army.mil/ords/f?p=101:7 https://www.floodsmart.gov/	https://www.ncdc.noaa.gov/stormevents/ https://icejam.sec.usace.army.mil/ords/f?p=101:7	http://msc.fema.gov/
Hailstorm	https://www.nssl.noaa.gov/education/svrwx101/hail/	https://www.ncdc.noaa.gov/stormevents/	
Hurricane, Tropical Storm, Nor'easter	https://www.aoml.noaa.gov/hrd/links.html http://www.aoml.noaa.gov/hrd/tcfaq/G11.html https://www.usgs.gov/hurricanes	https://www.ncdc.noaa.gov/stormevents/ https://www.aoml.noaa.gov/hrd-faq/#1569588325728-85935767-ade4	https://coast.noaa.gov/digitalcoast/data/home.html http://www.aoml.noaa.gov/hrd/tcfaq/G11.html
Invasive Species	https://www.invasivespeciesinfo.gov/resources-indexed https://www.doi.gov/invasivespecies https://www.dcnr.pa.gov/Conservation/WildPlants/InvasivePlants/Pages/default.aspx	http://www.imapinvasives.org/ https://www.dcnr.pa.gov/Conservation/WildPlants/InvasivePlants/Pages/default.aspx	https://www.doi.gov/invasivespecies/early-detection-and-rapid-response
Landslide	https://pubs.usgs.gov/pp/p1183/pp1183.html https://www.dcnr.pa.gov/Geology/GeologicHazards/Pages/default.aspx	https://www.dcnr.pa.gov/Geology/GeologicHazards/Landslides/Pages/default.aspx	

Hazard	General Information/Maps/Data Sources	Previous Occurrences	Risk and Vulnerability
Lightning Strike	https://ghrc.nsstc.nasa.gov/lightning/dataset-info.html https://www.lightningmaps.org/blitzortung/america/index.php?lang=en	https://www.ncdc.noaa.gov/stormevents/ http://www.lightningsafety.noaa.gov/statistics.htm	
Pandemic	www.flu.gov https://www.health.pa.gov/topics/disease/Pages/Pandemic.aspx http://www.who.int/en/ http://www.cdc.gov/h1n1flu/qa.htm	https://www.health.pa.gov/topics/prep/Pages/History.aspx https://www.cdc.gov/flu/pandemic-resources/basics/past-pandemics.html	https://www.ghsindex.org/
Radon Exposure	https://www.epa.gov/radon https://www.dep.pa.gov/Business/RadiationProtection/RadonDivision/Pages/default.aspx	https://www.dep.pa.gov/Business/RadiationProtection/RadonDivision/Pages/default.aspx	
Subsidence, Sinkholes	https://www.dcnr.pa.gov/Geology/GeologicHazards/Sinkholes/Pages/default.aspx http://water.usgs.gov/ogw/pubs/fs00165/ http://www-atlas.usgs.gov/atlasftp.html https://water.usgs.gov/ogw/subsidence.html	http://www.gis.dcnr.state.pa.us/maps/index.html?geology=true	https://www.dcnr.pa.gov/Geology/GeologicHazards/Sinkholes/Pages/default.aspx http://www.depgis.state.pa.us/pamsi/index.html
Tornado, Windstorm	https://iibec.org/giving-tornadoes-their-due/http://www.fema.gov/graphics/library/wmap.gif https://www.nssl.noaa.gov/education/svrwx101/tornadoes/	https://www.spc.noaa.gov/climo/online/monthly/newm.html https://www.ncdc.noaa.gov/stormevents/	https://www.fema.gov/media-library-data/1467990808182-0272256cba8a35a4e8c35eeff53dd547/fema_p361_July2016_508.pdf

Hazard	General Information/Maps/Data Sources	Previous Occurrences	Risk and Vulnerability
Wildfire	http://www.fs.fed.us/land/wfas https://www.dcnr.pa.gov/Communities/Wildfire/Pages/default.aspx	https://www.ncdc.noaa.gov/stormevents/	https://www.usgs.gov/land-resources/lcsp/fire-danger-forecast http://www.apps.dcnr.state.pa.us/forestry/farmbill/prioritylandscapes.html
Winter Storm	https://www.ready.gov/winter-weather https://www.nssl.noaa.gov/education/svrwx101/winter/	https://www.ncdc.noaa.gov/stormevents/ https://w2.weather.gov/climate/index.php?wfo=ctp http://climate.met.psu.edu/data/events/	https://www.fema.gov/media-library-data/1494008826172-76da095c3a5d6502ec66e3b81d5bb12a/FEMA_2017_WinterStorm_HTP_FINAL.pdf

Human-Made and Technological Hazards

Hazard	General Information/Maps/Data Sources	Previous Occurrences	Risk and Vulnerability
Building or Structure Collapse	https://www.dhs.gov/science-and-technology/building-and-infrastructure-protection-series-designing-buildings-withstand		
Civil Disturbance	https://www.usfa.fema.gov/downloads/pdf/publications/fa-142.pdf	https://en.wikipedia.org/wiki/List_of_incidents_of_civil_unrest_in_the_United_States	
Cyber Attack	https://www.homelandsecurity.pa.gov/cyber-security/Pages/Cyber-Security.aspx https://www.fema.gov/cybersecurity		https://www.fema.gov/blog/2019-10-28/building-culture-cyber-preparedness

Hazard	General Information/Maps/Data Sources	Previous Occurrences	Risk and Vulnerability
Dam Failure	https://nid.sec.usace.army.mil/ords/f?p=105:1::::::	https://www.dep.pa.gov/Business/Water/Waterways/DamSafety/Pages/default.aspx https://damsafety.org/dam-failures#Learning%20from%20the%20Past	https://www.dep.pa.gov/Business/Water/Waterways/DamSafety/Pages/Probable-Maximum-Precipitation-Study-.aspx
Disorientation	https://www.dcnr.pa.gov/Recreation/SearchAndRescue/Pages/default.aspx		
Drowning	https://ndpa.org/ http://www.cdc.gov/HomeandRecreationalSafety/Water-Safety/waterinjuries-factsheet.html		https://www.cdc.gov/homeandrecreationalsafety/water-safety/waterinjuries-factsheet.html
Environmental Hazards: Coal Mining	http://www.pasda.psu.edu/uci/SearchResults.aspx?Keyword=coal+mining https://www.dep.pa.gov/Business/Land/Mining/Pages/default.aspx	http://www.pasda.psu.edu/uci/SearchResults.aspx?Keyword=coal+mining https://www.cdc.gov/niosh/mining/statistics/minedisasters.html https://guides.libraries.psu.edu/c.php?g=332704&p=2236160	
Environmental Hazards: Oil and Gas Wells (Conventional and Unconventional)	https://www.depgis.state.pa.us/PaOilAndGasMapping/OilGasWellsStrayGasMap.html?	http://www.pasda.psu.edu/uci/SearchResults.aspx?originator=Pennsylvania+Department+of+Environmental+Protection	
Environmental Hazards: Gas and Liquid Pipelines	https://www.dep.pa.gov/Business/ProgramIntegration/Pennsylvania-Pipeline-Portal/Pages/default.aspx	https://www.phmsa.dot.gov/data-and-statistics/pipeline/pipeline-incident-20-year-trends	

Hazard	General Information/Maps/Data Sources	Previous Occurrences	Risk and Vulnerability
Environmental Hazards: Hazardous Materials Release	https://www.epa.gov/toxics-release-inventory-tri-program	http://www.phmsa.dot.gov/hazmat/library/data-stats/incidents https://www.epa.gov/toxics-release-inventory-tri-program	https://www.pema.pa.gov/Preparedness/Hazardous-Material/Pages/default.aspx
Levee Failure	https://levees.sec.usace.army.mil/#/ https://www.dep.pa.gov/Business/Water/Waterways/Flood-Protection/Pages/LeveeSafety.aspx		https://www.fema.gov/media-library-data/1493669998010-ca277a2ca7dd95f5011a63771cfbd368/Emergency_Preparedness_Guidelines_For_Levees_2012.pdf
Mass Food and Animal Feed Contamination	http://www.cdc.gov/foodsafety/cdc-and-food-safety.html	https://www.cdc.gov/foodnet/index.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Ffoodnet%2Findex.htm	
Nuclear Incidents	https://www.nrc.gov/about-nrc/emerg-preparedness/about-emerg-preparedness/planning-zones.html https://www.dep.pa.gov/Business/RadiationProtection/NuclearSafety/Pages/Pennsylvania's-Nuclear-Power-Plants.aspx	https://en.wikipedia.org/wiki/Lists_of_nuclear_disasters_and_radioactive_incidents	https://www.nrc.gov/about-nrc/emerg-preparedness.html
Opioid Addiction	https://www.cdc.gov/drugoverdose/epidemic/index.html https://data.pa.gov/stories/s/9q45-nckt/	https://www.drugabuse.gov/opioid-summaries-by-state/pennsylvania-opioid-involved-deaths-related-harms	

Hazard	General Information/Maps/Data Sources	Previous Occurrences	Risk and Vulnerability
Terrorism	https://www.dhs.gov/xlibrary/assets/rma-risk-assessment-technical-publication.pdf https://www.fema.gov/media-library-data/20130726-1549-20490-0802/terrorism.pdf	https://ourworldindata.org/terrorism	https://www.dhs.gov/xlibrary/assets/rma-risk-assessment-technical-publication.pdf https://www.fema.gov/media-library-data/20130726-1524-20490-3869/howto7.pdf
Transportation Accidents	http://www.fhwa.dot.gov/infrastructure/asstmgmt/dipa03.cfm	https://safetydata.fra.dot.gov/officeofsafety/publicsite/Query/TenYearAccidentIncidentOverview.aspx https://www.penndot.gov/TravelInPA/Safety/Pages/Crash-Facts-and-Statistics.aspx https://crashinfo.penndot.gov/PCIT/welcome.html http://www.ntsb.gov/ntsb/query.asp https://www.ntsb.gov/_layouts/ntsb.aviation/index.aspx https://www.ntsb.gov/_layouts/ntsb.aviation/index.aspx	
Urban Fire and Explosion	http://www.pafirefighters.com/ https://www.nfpa.org/News-and-Research/Data-research-and-tools/Building-and-Life-Safety/Home-Structure-Fires	https://www.nfpa.org/News-and-Research/Data-research-and-tools/Emergency-Responders/Fire-department-calls	

Hazard	General Information/Maps/Data Sources	Previous Occurrences	Risk and Vulnerability
Utility Interruption	http://www.puc.state.pa.us/		https://www.fema.gov/media-library-data/1512398599047-7565406438d0820111177a9a2d4ee3c6/POIA_Final_7-2017v2_(Compliant_pda)_508.pdf https://www.fema.gov/media-library-data/1510690314175-1e6c4874b251c3022ac4b57b0369e2da/Power_Outage_Ready_Business_Toolkit_Interactive_Final_508.pdf
War and Criminal Activity	https://www.ucrdatatool.gov/Search/Crime/State/StatebyState.cfm	https://www.attorneygeneral.gov/data/pennsylvania-uniform-crime-reporting-system-offenses/ https://www.ucrdatatool.gov/Search/Crime/State/StatebyState.cfm	

Appendix 15 | Checklist to Identify Local Compliance with the National Flood Insurance Program (NFIP)

Name: **Title:**

Jurisdiction: **Email:**

Participation in the NFIP is based on a voluntary agreement between a community and FEMA. Compliance with the NFIP, however, extends beyond mere participation in the program. The three basic components of the NFIP include 1) floodplain identification and mapping risk, 2) responsible floodplain management and 3) flood insurance. The requirements of the program are listed below. Please state whether or not your jurisdiction takes the following actions and provide appropriate comments.

Staff Resources		
Topic	Source of Information	Comments
Is the Community FPA or NFIP Coordinator certified?	Community Floodplain Administrator (FPA)	
Is the floodplain management an auxiliary function?	Community FPA	
Provide an explanation of NFIP administration services (e.g., permit review, GIS, education or outreach, inspections, engineering capability)	Community FPA	
What are the barriers to running an effective NFIP program in the community?	Community FPA	
Compliance History		
Topic	Source of Information	Comments
Is the community in good standing with the NFIP?	State NFIP Coordinator, FEMA NFIP Specialist, community records	Municipality Action
Are there any outstanding compliance issues (i.e., current violations)?		
When was the most recent Community Assistance Visits (CAV) or Community Assistance Contact (CAC)?		
Is a CAV or CAC scheduled or needed?		

Regulation		
Topic	Source of Information	Comments
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	Community Status Book	http://www.fema.gov/national-flood-insurance-program/national-flood-insurance-program-community-status-book
Are the FIRMs digital or paper?	Community FPA	
Do floodplain development regulations meet or exceed FEMA or State minimum requirements? If so, in what ways?	Community FPA	
Provide an explanation of the permitting process.	Community FPA, State, FEMA NFIP	
Insurance Summary		
Topic	Source of Information	Comments
How many NFIP policies are in the community? What is the total premium and coverage?	State NFIP Coordinator or FEMA NFIP Specialist	
How many claims have been paid in the community? What is the total amount of paid claims? How many substantial damage claims have there been?	FEMA NFIP or Insurance Specialist	
How many structures are exposed to flood risk within the community?	Community FPA or GIS Analyst	
Describe any areas of flood risk with limited NFIP policy coverage.	Community FPA or FEMA Insurance Specialist	
Community Rating System (CRS)		
Topic	Source of Information	Comments
Does the community participate in CRS?	Community FPA, State, FEMA NFIP	
If so, what is the community's CRS Class Ranking	Flood Insurance Manual	http://www.fema.gov/flood-insurance-manual
What categories and activities provide CRS points and how can the class be improved?		
Does the plan include CRS planning requirements?	Community FPA, FEMA CRS Coordinator, ISO representative	

Appendix 16 | Jurisdictional Risk Comparison Matrix

Purpose: To distinguish unique and varied risk to hazards among jurisdictions.

Instructions: List the hazards profiled in the HMP and the calculated countywide risk factor. Ask each jurisdiction to mark for each hazard whether it believes its risk is greater than (>), less than (<), or equal to the County's risk factor.

JURISDICTION	IDENTIFIED HAZARD AND CORRESPONDING COUNTYWIDE RISK FACTOR												
	Hazard 1	Hazard 2	Hazard 3	Hazard 4	Hazard 5	Hazard 6	Hazard 7	Hazard 8	Hazard 9	Hazard 10	Hazard 11	Hazard 12	Hazard 13
	3.x	3.x	3.x	2.x	2.x	2.x	2.x	2.x	2.x	2.x	1.x	1.x	1.x
EXAMPLE: Hazard Township	<	=	=	=	>	=	=	>	>	=	=	=	<

Appendix 17 | Data Requirements for Historic Properties and Cultural Resources

To perform hazard mitigation planning for historic and cultural resources, it is critical to gather pertinent inventory information regarding individual historic and cultural resources, in addition to natural hazard-related data. Opportunities to combine surveying efforts for building data and hazard data should be pursued.

It is anticipated that data regarding historic and cultural resources should already be available in an existing database or inventory, such as the Pennsylvania Cultural Resources Geographic Information System. While this data exists, it should not be considered complete. It is important to pursue opportunities to combine historic and cultural resource data and hazard mitigation data collection and surveying efforts. The PA SHPO should be consulted as it is possible that there are existing surveying efforts planned into which hazard risks can be incorporated. This is also an opportunity to update out-of-date survey data, and to expand into to previously un-surveyed areas. It is important to consult with PA SHPO staff to determine if information is available for specific areas, or to determine if further inventory is required to document potential historic and cultural resources in that area.

The following checklist identifies the necessary building data to be determined/collected, which is in accordance with the PA SHPO Minimum Record for above ground resources, and will be integrated with additional hazard-related data:

Historic Property and Cultural Resource Building Characteristics Data	Included	Not Included
PHMC Key Number*	☐	☐
Property Name* (common name, if applicable)	☐	☐
Identification and Location: Latitude/Longitude Property Address Tax Parcel ID Number Municipality	☐	☐
Architectural Style*	☐	☐
Historic Property Function	☐	☐
Current Property Function	☐	☐
Historic Designation* (national, state, local)	☐	☐
Historic District Name (if applicable)	☐	☐
Year Built	☐	☐
Type of Materials: *Type of Foundation**	☐	☐

Historic Property and Cultural Resource Building Characteristics Data	Included	Not Included
*Height of Foundation** *Type of Frame* *Roofing Type & Material** *Exterior Wall Material(s)**		
Resource Type (building, object, site, structure)	☐	☐
Number of Accessory Buildings	☐	☐
Assessed Value of Building/Property	☐	☐
Width in Bays	☐	☐
Number of Stories	☐	☐
Presence of a Basement* (Y/N)	☐	☐
Physical Condition (excellent, good, fair, poor)	☐	☐
Property/Building Photographs	☐	☐

*Essential data

The following checklist identifies the necessary flood-related and hazard-related information to be collected/determined, which will be integrated with building data to develop a preservation-based hazard mitigation solution to best protect historic properties and cultural resources from flooding and other natural hazards, while preserving its integrity and significance:

Flood and Hazard Risk Data	Included	Not Included
FEMA FIRM Number	☐	☐
100-Year Floodplain? (Y/N) *	☐	☐
500-Year Floodplain? (Y/N) *	☐	☐
Base Flood Elevation*	☐	☐
First Floor Elevation*	☐	☐
Historic Properties GIS Layer	☐	☐
Lowest Opening Elevation*	☐	☐
Lowest Adjacent Grade*	☐	☐
Lowest Opening Type (door, window.)	☐	☐

Flood and Hazard Risk Data	Included	Not Included
Type of Flooding (riverine, coastal, etc.)	☐	☐
Flooding Source	☐	☐
Distance from Closest Edge of Building to Flooding Source (where possible)	☐	☐
Flood Mitigation Observed (elevation, wet/dry floodproofing, etc.)	☐	☐
Distance to Nearest Dense Vegetation (for wildfire risk)	☐	☐
Distance from Building to Nearest Mature Tree (for severe wind event risk)	☐	☐

**Essential data*

Appendix 18 | Historic Properties and Cultural Resources Preservation Potential Funding Sources

A list of federal, state and private historic and cultural preservation funding sources is included below:

Funding Source Name	Funding Source Intentions and Considerations
Federal Funding Sources	
Flood Mitigation Assistance (FMA) Program	Assists states, federally recognized Indian tribal governments, and communities with the goal of reducing or eliminating claims under the National Flood Insurance Program (NFIP). Flood mitigation projects to reduce or eliminate the long-term risk of flood damage to properties insured under the NFIP are eligible for the FMA program. Eligible project types include acquisition-demolition and acquisition-relocation; elevation of existing structures to the Base Flood Elevation (BFE) or an ABFE Advisory Base Flood Elevation (ABFE) or higher; minor localized flood risk reduction projects; and dry-flood proofing (historic properties and non-residential structures).
Hazard Mitigation Grant Program (HMGP)	Provides funding support to states, Indian tribal governments, territories, communities, and other eligible applicants to reduce the risk of future damage, loss of life and property in any area affected by a major disaster.
Pre-Disaster Mitigation (PDM)	Provides funding support for pre-disaster mitigation planning and projects primarily addressing natural hazards.
Preparing for Emerging Treats and Hazards (PETH)	Provides assistance that will support communities prepare for new and emerging threats and hazards.
203(k) Rehab Mortgage Insurance	Assists borrowers and lenders, insuring a single, long term, fixed or adjustable rate loan that covers both the acquisition and rehabilitation of a property.
Neighborhood Stabilization Program (NSP)	Provides emergency assistance to stabilize communities with high rates of abandoned and foreclosed homes.
National Center for Preservation Technology and Training	Focuses on funding projects that develop new technologies or adapt existing technologies to preserve cultural resources.
State Funding Sources	
Certified Local Government (CLG) Grants*	The National Historic Preservation Act of 1966 establishes a program of matching grants to the states through which the federal government assists the SHPOs in carrying out their historic preservation responsibilities. Federal law requires at least 10 percent of the annual Historic Preservation Fund grant allocation to Pennsylvania be set aside for distribution to Certified Local Governments (CLG). This is only for Certified Local Governments, in which there are 44 in the Commonwealth. While the funding source is federal, the actual grant application is through the SHPO, at the state level.
Keystone Fund Historic Preservation Planning Grants	Supports projects that identify, preserve, promote and protect historic and archaeological resources of Pennsylvania for the benefit of the public and the revitalization of communities.

Funding Source Name	Funding Source Intentions and Considerations
Keystone Historic Preservation Construction Grants	Supports projects that rehabilitate, restore, or preserve historic resources listed in or eligible for listing in the National Register of Historic Places.
The Redevelopment Assistance Capital Program (RACP)	Administered for the acquisition and construction of regional economic, cultural, civic, recreational, and historical improvement projects.
Appalachian Regional Commission (ARC) Grants	Provides a broad array of small business assistance to the Appalachian region. The Appalachian Region follows the spine of the Appalachian Mountains through 13 states, including through 52 of Pennsylvania's counties.
Marcellus Legacy Fund	Focuses on funding statewide initiatives to assist with flood mitigation projects.
Private Funding Sources	
Johanna Favrot Fund for Historic Preservation	Focuses on saving historic environments to foster an appreciation of our nation's diverse cultural heritage and to preserve and revitalize the livability of the nation's communities. This is available for National Trust members at a certain level, or Main Street members.
National Trust Preservation Funds (NTPF)	Encourages preservation at the local level by providing seed money for preservation projects to help stimulate public discussion, enable local groups to gain the technical expertise, introduce the public to preservation concepts and techniques, and encourage financial participation by the private sector. This is available for Organizational Level Forum members or Main Street America members of the National Trust, and is primarily used for planning purposes, opposed to brick and mortar work.
Louis J. Appell, Jr., Preservation Fund for Central Pennsylvania	Encourages preservation at the local level by providing money for the maintenance and preservation of historic places in Central Pennsylvania. This is available for Trust members at organizational level.
Henry A. Jordan, M.D., Preservation Excellence Fund	Provides funding to deserving organizations demonstrating commitment to the protection of natural and cultural resources in the Mid-Atlantic region.
Archaeological Institute of America (AIA) Site Preservation Grant	Targets projects that preserve archaeological sites, and emphasize outreach, education, and/or best practices intended to create a positive impact on the local community, students, and the discipline of archaeology.
Industrial Heritage Preservation Grants, Society for Industrial Archaeology	Focuses on the study, documentation, recordation, and/or preservation of significant historic industrial sites, structures, and objects.

Appendix 19 | Hazard Mitigation Assistance (HMA) Forms

HAZARD MITIGATION GRANT PROGRAM (HMGP)
Letter of Intent/Pre-Application

SUBJECT: Hazard Mitigation Grant Program (HMGP) Letter of Intent

TO: State Hazard Mitigation Officer (SHMO)
Pennsylvania Emergency Management Agency
1310 Elmerton Avenue
Harrisburg, PA 17110

Dear SHMO:

The purpose of this notice is to inform you of our interest in participating in the Hazard Mitigation Grant Program for federally declared disaster FEMA-_____**-DR-PA.**

_____ _____
Signature **Title**

DATE: _____

APPLICANT COMMUNITY: _____

COUNTY: _____

PROJECT CONTACT

NAME: _____

TITLE: _____

AGENCY: _ _____

ADDRESS: _ _____

_ _____

PHONE: _ _____

E-Mail: _____

TYPE OF ORGANIZATION

Municipal Government	**Private**	**Nonprofit**
County Government	**State**	**Agency**

LOCATION OF PROJECT: _____
_____

BRIEF DESCRIPTION OF PROJECT: _____
_____
_____

BRIEF DESCRIPTION OF PROBLEM TO BE SOLVED: _____
_____
_____

TOTAL ESTIMATED COST: _____

SOURCE OF FUNDING FOR NON-FEDERAL SHARE: _____

FAX to PEMA at 717-651-2150 or mail to:

State Hazard Mitigation Officer
PEMA
1310 Elmerton Avenue
Harrisburg, Pennsylvania 17110

PRE-APPLICATION MUST BE SUBMITTED BEFORE AN APPLICATION PACKET WILL BE SENT TO YOU

FEMA HAZARD MITIGATION ASSISTANCE UNIFIED GRANT PROGRAM
(Non Disaster Grants) Letter of Interest

SUBJECT: FEMA Hazard Mitigation Assistance Unified Grant Program (Non Disaster HM Grants)

TO: State Hazard Mitigation Officer (SHMO)
Pennsylvania Emergency Management Agency, Bureau of Recovery and Mitigation
Hazard Mitigation Division, 1310 Elmerton Avenue, Harrisburg, PA 17110

Dear SHMO:
The purpose of this notice is to inform you of our interest in participating in the Unified Hazard Mitigation Assistance Program for the federal fiscal year _____(FFY).

_____ _____
Signature Title

DATE: _____

APPLICANT COMMUNITY:_____

COUNTY: _____

PROJECT CONTACT

NAME: _____

TITLE: _____

AGENCY: _____

ADDRESS: _____

PHONE: _____

EMAIL: _____

TYPE OF PROGRAMS INTERESTED IN
Flood Mitigation Assistance (FMA)
Building Resilient Infrastructure and Communities (BRIC)

TYPE OF ORGANIZATION

Municipal Government **Private Nonprofit** **Public College/University (PDM only)**
County Government **State Agency**

LOCATION OF PROJECT: _____
_____

BRIEF DESCRIPTION OF PROJECT: _____
_____

BRIEF DESCRIPTION OF PROBLEM TO BE SOLVED: _____
_____

TOTAL ESTIMATED COST: _____

SOURCE OF FUNDING FOR NON-FEDERAL SHARE: _____

FAX to PEMA at 717-651-2150 or mail to: State Hazard Mitigation Officer (SHMO)
Pennsylvania Emergency Management Agency, Bureau of Recovery & Mitigation,
Hazard Mitigation Division, 1310 Elmerton Avenue, Harrisburg, PA 17110

***PRE-APPLICATION MUST BE SUBMITTED BEFORE AN APPLICATION PACKET WILL BE SENT TO YOU**