



# SECTION 1. INTRODUCTION

## 1.1 BACKGROUND

A Hazard Mitigation Plan (HMP) is a living document that communities use to reduce their vulnerability to hazards. It forms the foundation for a community's long-term strategy to reduce disaster losses and creates a framework for decision making to reduce damages to lives, property, and the economy from future disasters. Examples of mitigation projects include home acquisitions or elevations to remove structures from high risk areas, upgrades to critical public facilities, and infrastructure improvements. Ultimately, these actions reduce vulnerability, and communities are able to recover more quickly from disasters. Putnam County has demonstrated its commitment to reducing disaster losses by initially developing its multi-jurisdictional HMP and again in 2015, updating information upon which to base a successful mitigation strategy to reduce the impacts of natural disasters and to increase the resiliency of its communities.

In response to the requirements of the Disaster Mitigation Act of 2000 (DMA 2000), Putnam County and the municipalities located therein have developed this HMP, which represents a regulatory update to the 2015 "Putnam County Multi-Jurisdictional All Hazard Mitigation Plan Update". The DMA 2000 amends the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act) and is designed to improve planning for, response to, and recovery from disasters by requiring state and local entities to implement pre-disaster mitigation planning and develop HMPs. The Federal Emergency Management Agency (FEMA) has issued guidelines for HMPs. The New York State Division of Homeland Security and Emergency Services (NYS DHSES), formerly the NYS Office of Emergency Management (NYSOEM), also supports plan development for jurisdictions in New York State and issued the NYS DHSES Hazard Mitigation Planning Standards for HMPs developed with NYS DHSES-administered funds.

**Hazard Mitigation** is any sustained action taken to reduce or eliminate the long-term risk and effects that can result from specific hazards.

FEMA defines a **Hazard Mitigation Plan** as the documentation of a state or local government evaluation of natural hazards and the strategies to mitigate such hazards.

Specifically, the DMA 2000 requires that states, with support from local governmental agencies, develop and update HMPs on a five-year basis to prepare for and reduce the potential impacts of natural hazards. The DMA 2000 is intended to facilitate cooperation between state and local authorities, prompting them to work together. This enhanced planning better enables local and State governments to articulate accurate needs for mitigation, resulting in faster allocation of funding and more effective risk reduction projects.

Putnam County has been included in 24 FEMA (major and emergency) declarations.

During the course of the planning process, Putnam County and its participating jurisdictions updated the plan to address a revised group of hazards of concern that affect the planning area to examine changes in vulnerability due to hazard events with the intent of developing an updated mitigation strategy with the goal of continually increasing the resilience of the County and its jurisdictions.

### 1.1.1 DMA 2000 Origins -The Stafford Act

In the early 1990s, a new federal policy regarding disasters began to evolve. Rather than reacting whenever disasters strike communities, the federal government began encouraging communities to first assess their vulnerability to various disasters and proceed to take actions to reduce or eliminate potential risks. The logic is that a disaster-resistant community can rebound from a natural disaster with less loss of property or human injury, at much lower cost, and, consequently, more quickly. Moreover, these communities minimize other costs associated with disasters, such as the time lost from productive activity by business and industries.





The DMA 2000 provides an opportunity for states, tribes, and local governments to take a new and revitalized approach to mitigation planning. The DMA 2000 amended the Stafford Act by repealing the previous mitigation planning provisions (Section 409) and replacing them with a new set of requirements (Section 322). Section 322 sets forth the requirements that communities evaluate natural hazards within their respective jurisdictions and develop an appropriate plan of action to mitigate those hazards, while emphasizing the need for State, tribal and local governments to closely coordinate mitigation planning and implementation efforts.

The amended Stafford Act requires that each local jurisdiction identify potential natural hazards to the health, safety, and well-being of its residents and identify and prioritize actions that the community can take to mitigate those hazards—before disaster strikes. To remain eligible for hazard mitigation assistance from the federal government, communities must first prepare and then maintain and update an HMP (this plan).

Responsibility for fulfilling the requirements of Section 322 of the Stafford Act and administering the FEMA Hazard Mitigation Program has been delegated to the State of New York, specifically to NYS DHSES. FEMA also provides support through guidance, resources, and plan reviews.

### 1.1.2 Benefits of Mitigation Planning

The planning process helps prepare citizens and government agencies to better respond when disasters occur. Also, mitigation planning allows Putnam County as a whole, and participating municipalities, to remain eligible for mitigation grant funding for mitigation projects that will reduce the impact of future disaster events. Eligible projects include property acquisition and structure demolition, structure elevation, localized flood risk reduction projects, infrastructure retrofit, soil stabilization, wildfire mitigation, post-disaster code enforcement, wind retrofit for one- and two-family residences, and planning related activities. The long-term benefits of mitigation planning include the following:

- An increased understanding of hazards faced by Putnam County and their inclusive municipalities.
- Building more sustainable and disaster-resistant communities.
- Increasing education and awareness of hazards and their threats, as well as their risks.
- Developing implementable and achievable actions for risk reduction in the and its jurisdictions.
- Financial savings through partnerships that support planning and mitigation efforts.
- Focused use of limited resources on hazards that have the biggest impact on the community.
- Reduced long-term impacts and damages to human health and structures.
- Reduced repair costs.

National Benefit-Cost Ratio (BCR) Per Peril <small>*BCR numbers in this study have been rounded</small>		Beyond Code Requirements	Federally Funded
<b>Overall Hazard Benefit-Cost Ratio</b>		<b>\$4:1</b>	<b>\$6:1</b>
<b>Riverine Flood</b>		\$5:1	\$7:1
<b>Hurricane Surge</b>		\$7:1	Too few grants
<b>Wind</b>		\$5:1	\$5:1
<b>Earthquake</b>		\$4:1	\$3:1
<b>Wildland-Urban Interface Fire</b>		\$4:1	\$3:1

Source: FEMA 2018; Federal Insurance Mitigation Administration 2018  
Note: Natural hazard mitigation saves \$6 on average for every \$1 spent on federal mitigation grants.

### 1.1.3 Organizations Involved in the Mitigation Planning Effort

Putnam County and the participating jurisdictions intend to implement this HMP with full coordination and participation of county and local departments, organizations and groups, and relevant state and federal entities. Coordination helps to ensure that stakeholders have established communication channels and relationships necessary to support mitigation planning and mitigation actions included in Section 6 (Mitigation Strategy) and in the jurisdictional annexes in Section 9 (Jurisdictional Annexes).



In addition to Putnam County, nine municipal governments in the County have participated in the 2021 planning process as indicated in Table 1-1 below. A map of the Putnam County HMP planning area is provided in Figure 1-1 following the table.

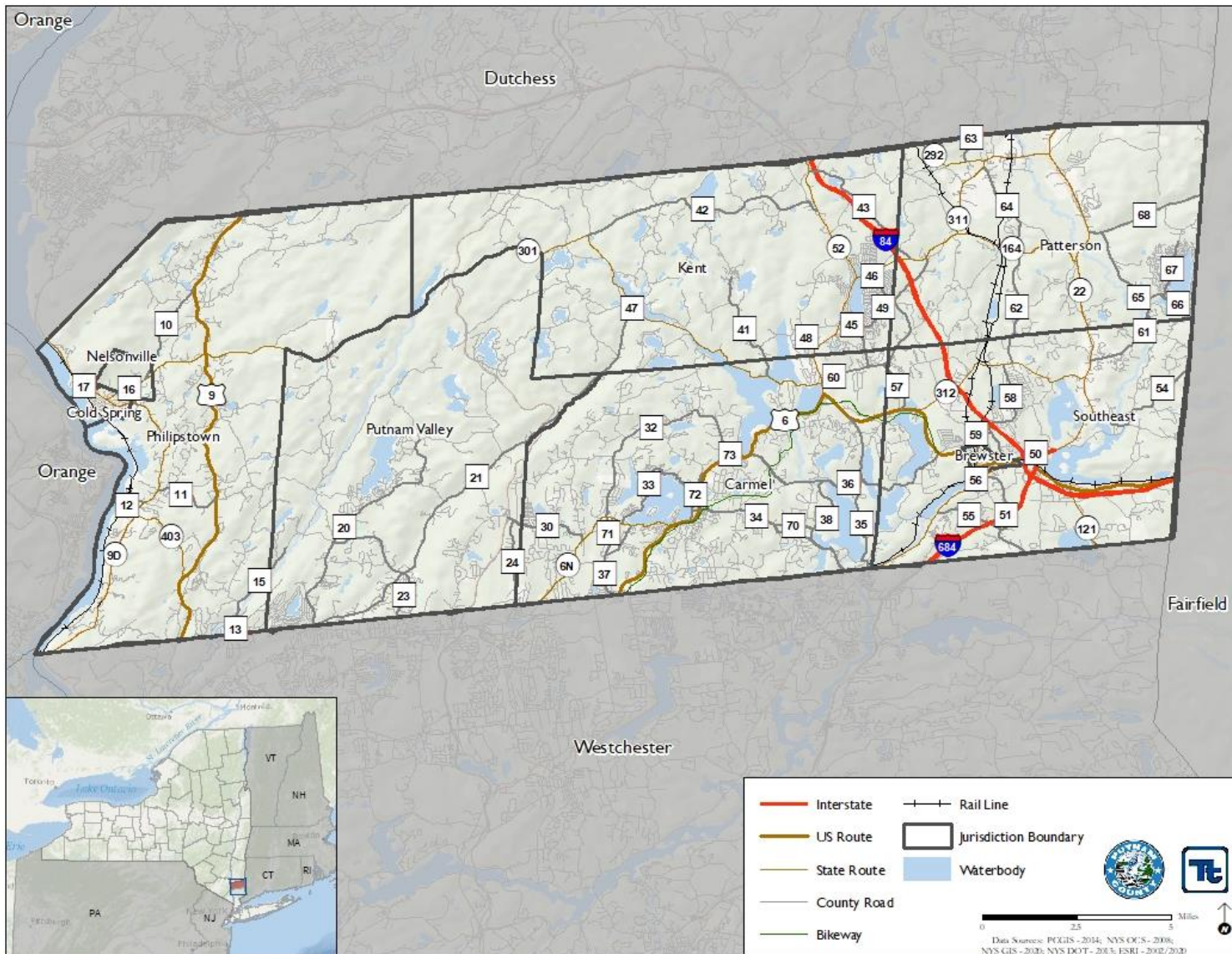
**Table 1-1. Participating Putnam County Jurisdictions**

Jurisdictions	
Putnam County	
Brewster (V)	Patterson (V)
Carmel (T)	Philipstown (T)
Cold Spring (V)	Putnam Valley (T)
Kent (T)	Southeast (T)
Nelsonville (V)	

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Figure 1-1. Putnam County, New York Mitigation Plan Area





## Multiple Agency Support for Hazard Mitigation

Primary responsibility for the development and implementation of mitigation strategies and policies lies with local governments. However, local governments are not alone; various partners and resources at the regional, state, and federal levels are available to assist communities in the development and implementation of mitigation strategies. Within New York State, NYS DHSES is the lead agency providing hazard mitigation planning assistance to local jurisdictions. NYS DHSES provides guidance to support mitigation planning. In addition, FEMA provides grants, tools, guidance, and training to support mitigation planning.

Additional input and support for this planning effort was obtained from a range of agencies and through public involvement (as discussed in Section 3). The Putnam County Bureau of Emergency Services, with support from the Steering Committee, provided project management and oversight of the planning process. While participating municipalities were asked to identify a primary and alternate local Point of Contact (POC), broad participation by municipal representatives was encouraged and supported throughout the planning process. A list of Steering Committee and municipal POCs is provided in Section 3 (Planning Process), while Appendix B (Participation Matrix) provides further documentation of the broader level of municipal involvement.

This HMP was prepared in accordance with the following regulations and guidance:

- FEMA *Local Mitigation Planning Handbook*, March 2013.
- FEMA *Integrating Hazard Mitigation into Local Planning*, March 1, 2013.
- FEMA *Plan Integration: Linking Local Planning Efforts*, July 2015.
- *Local Mitigation Plan Review Guide*, October 1, 2011.
- DMA 2000 (Public Law 106-390, October 30, 2000).
- 44 Code of Federal Regulations (CFR) Parts 201 and 206 (including: Feb. 26, 2002, Oct. 1, 2002, Oct. 28, 2003, and Sept. 13, 2004 Interim Final Rules).
- FEMA *How-To Guide for Using HAZUS-MH for Risk Assessment* FEMA Document No. 433, February 2004.
- FEMA *Mitigation Planning How-to Series* (FEMA 386-1 through 4, 2002), available at: <http://www.fema.gov/fima/planhowto.shtm>.
- FEMA *Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards*, January 2013.
- NYS DHSES *Hazard Mitigation Planning Standard*, 2017.
- NYS DHSES *Hazard Mitigation Planning Standard Guide*, 2017.
- NYS Hazard Mitigation Plan, 2019.

Table 1-2 summarizes the requirements outlined in the DMA 2000 Interim Final Rule and provides the section where each is addressed in this HMP.



Table 1-2. FEMA Local Mitigation Plan Review Crosswalk

Plan Criteria	Primary Location in Plan
<b>Prerequisites</b>	
Adoption by the Local Governing Body: §201.6(c)(5)	Section 2.0; Appendix A
<b>Planning Process</b>	
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	Section 3.0
<b>Risk Assessment</b>	
Identifying Hazards: §201.6(c)(2)(i)	Sections 5.2
Profiling Hazards: §201.6(c)(2)(i)	Section 5.4
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Section 5.4
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Section 4.0 Section 5.4
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Section 5.4
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Section 4.0; Section 9 Annexes
<b>Mitigation Strategy</b>	
Local Hazard Mitigation Goals: §201.6(c)(3)(i)	Section 6.0; Section 9 Annexes
Identification and Analysis of Mitigation Actions: §201.6(c)(3)(ii)	Section 6.0; Section 9 Annexes
Implementation of Mitigation Actions: §201.6(c)(3)(iii)	Section 6.0; Section 9 Annexes
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)	Section 6.0; Section 9 Annexes
<b>Plan Maintenance Process</b>	
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	Section 7.0
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)	Section 7.0; Section 9 Annexes
Continued Public Involvement: §201.6(c)(4)(iii)	Section 7.0

### 1.1.4 Organization

The Putnam County HMP update is organized as a two-volume plan. Volume I provides information on the overall planning process and natural hazard profiling and vulnerability assessments, which serve as a basis for understanding risk and identifying appropriate mitigation actions. As such, Volume I is intended for use as a resource for on-going mitigation analysis. Volume II provides an annex dedicated to each participating jurisdiction. Each annex summarizes the jurisdiction’s legal, regulatory, and fiscal capabilities; identifies vulnerabilities to natural hazards; records status of past mitigation actions; and presents an individualized mitigation strategy. The annexes are intended to provide an expedient resource for each jurisdiction for implementation of mitigation projects and future grant opportunities, as well as place for each jurisdiction to record and maintain their local aspect of the countywide plan.

#### Mission Statement

The mission of the Putnam County Hazard Mitigation Plan is to protect life safety, property, the environment, and the economy by reducing impacts and interruptions caused by natural hazards to ensure a more resilient County.

A mission statement or guiding principle describes the overall duty and purpose of the planning process and serves to identify the principle message of the plan. It focuses or constrains the range of goals and objectives identified. This is not a goal because it does not describe outcomes. During the 2021



planning process, the Steering Committee developed a mission statement to provide a direction for the plan and provide an overarching framework for the goals of the plan.

### Goals and Objectives

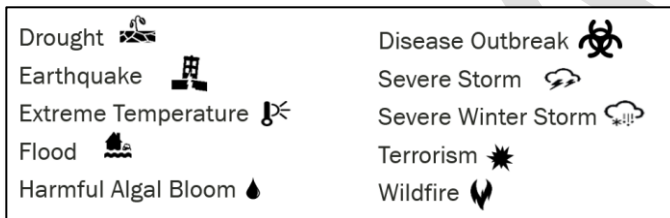
The planning process included a review and update of the prior mitigation goals and the addition of all new objectives as a basis for the planning process and to guide the selection of appropriate mitigation actions addressing all hazards of concern. Further, the goal development process considered the mitigation goals expressed in the New York State HMP, as well as other relevant county and local planning documents, as discussed in Section 6 (Mitigation Strategy).

#### The 5 Goals of the Putnam County HMP:

1. Protect Life and Property
2. Increase public awareness, education, and outreach efforts among all stakeholders to foster resiliency, preparedness and mitigation opportunities in the public and private spheres.
3. Protect natural systems and encourage the use to mitigation natural hazards.
4. Enhance or develop programs to build regional, county and local mitigation and related emergency management capabilities.
5. Promote resilient and sustainable land development practices to improve the ability to recover and bounce back faster from impacts of natural hazard events.

### Hazards of Concern

Putnam County and participating jurisdictions reviewed the natural hazards that caused measurable impacts based on events, losses, and information available since the development of the Putnam County HMP Update (2015) and the New York State Hazard Mitigation Plan - 2019 Update. Putnam County and participating jurisdictions evaluated the risk and vulnerability due to each of the hazards of concern on the assets of each



participating jurisdiction. While the overall hazard rankings were calculated for the county and each participating municipality, the overall hazard rankings displayed in each annex reflect municipal input. The hazard risk rankings were used to focus and prioritize individual jurisdictional mitigation strategies.

### Plan Integration into Other Planning Mechanisms

Effective mitigation is achieved when hazard awareness and risk management approaches and strategies become an integral part of public activities and decision-making. Within the County there are many existing plans and programs that support hazard risk management, and thus it is critical that this HMP integrates, coordinates with, and complements those mechanisms. Comprehensive plans, codes and ordinances, local watershed plans are among the sources of information to update the County and municipal capabilities, to identify mitigation strategies, and to develop integration actions.

The “Capability Assessment” section of Section 6 (Mitigation Strategy) provides a summary and description of the existing plans, programs and regulatory mechanisms at all levels of government (federal state, county, and local) that support hazard mitigation within the County. Within each jurisdictional annex in Section 9 (Jurisdictional Annexes), the County and each participating jurisdiction identified how they have integrated hazard risk management into their existing planning, regulatory and operational/administrative framework (“existing integration”), and how they intend to promote this integration (“opportunities for future integration”).

A further summary of these continued efforts to develop and promote a comprehensive and holistic approach to hazard risk management and mitigation is presented in Section 9 (Jurisdictional Annexes).



### 1.1.5 Implementation of Prior and Existing Local Hazard Mitigation Plans

Section 6 (Mitigation Strategy) and Section 9 (Jurisdictional Annexes) of the plan present the status of the mitigation projects identified in the 2015 Putnam County HMP. Numerous projects and programs have been implemented that have reduced hazard vulnerability to assets in the planning area. The County and municipal annexes, as well as plan maintenance procedures in Section 7 (Plan Maintenance), were developed to include specific, implementable activities. Future actions include integrating hazard mitigation goals into comprehensive plan updates; reviewing the HMP during updates of codes, ordinances, zoning, and development; and ensuring a more thorough integration of hazard mitigation, with its related benefits, will be completed within the upcoming five-year planning period.

### 1.1.6 Implementation of the Planning Process

The planning process and findings are required to be documented in local HMPs. To support the planning process in developing this HMP, Putnam County and the participating jurisdictions have accomplished the following:

- Developed a Steering Committee and countywide planning partnership with municipalities and stakeholders.
- Reviewed the 2015 *Putnam County Multi-Jurisdictional All-Hazard Mitigation Plan Update*.
- Identified and reviewed those natural hazards that are of greatest concern to the community (hazards of concern) to be included in the plan.
- Profiled the relevant natural hazards.
- Estimated the inventory at risk and potential losses associated with the relevant hazards.
- Reviewed and updated the hazard mitigation goals and added new objectives.
- Reviewed mitigation strategies identified in the 2015 Putnam County HMP.
- Developed new mitigation actions to address reduction of vulnerability of hazards of concern.
- Involved a wide range of stakeholders and the public in the plan process.
- Developed mitigation plan maintenance procedures to be executed after obtaining approval of the plan from NYS DHSES and FEMA.

As required by the DMA 2000, Putnam County and participating jurisdictions have informed the public and provided opportunities for public comment and input. Numerous agencies and stakeholders have participated as core or support members by providing input and expertise throughout the planning process. Refer to Appendix D (Public and Stakeholder Outreach) for copies of public service announcements, newspaper articles, and social media posts.

It is important to note that this planning process was conducted on an expedited schedule due to factors including the short timeframe allocated as a result of the relationship between the project initiation and the grant performance period, and, importantly the fact that the County performed the planning process during the height of the COVID-19 pandemic which created a profound burden on limited County and municipal resources. As such, the County and its consultant conducted all meetings virtually and supplemented meetings with extensive email and telephone communications to ensure continuity of the process. In addition, the County created a hazard mitigation plan website to disseminate key information to the public and stakeholders. In light of and despite these challenges, Putnam County developed this comprehensive update to its hazard mitigation plan, a plan that will frame its actions to support increased resiliency in the coming years.

This HMP update documents the process and outcomes of Putnam County and the jurisdictions' efforts. Section 2 (Plan Adoption) includes documentation that the prerequisites for plan approval have been met. Section 3 (Planning Process) includes additional information on the process to develop this plan.

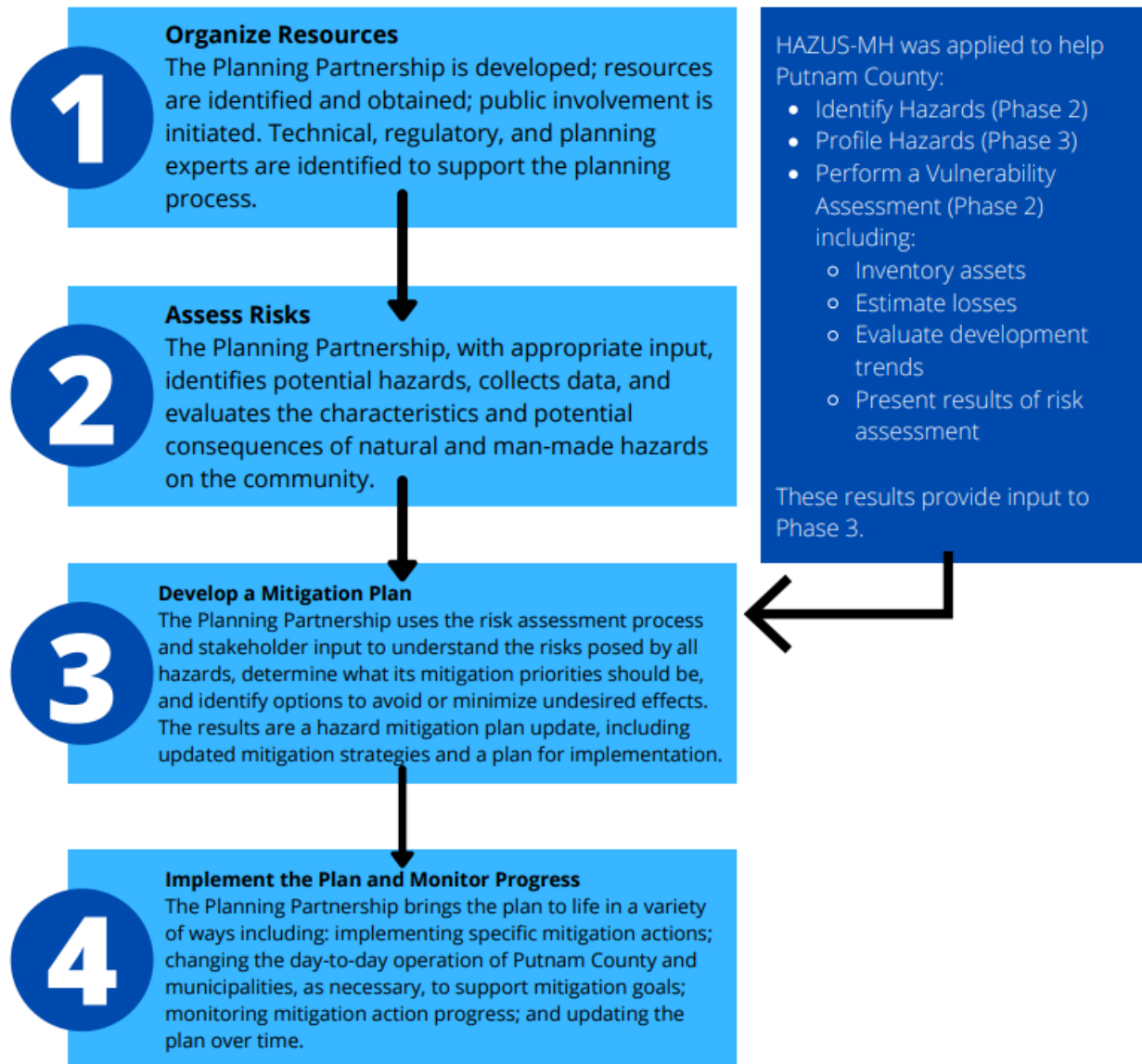




### 1.1.7 Organization of This Mitigation Plan

This HMP is organized in accordance with FEMA and NYS DHSES guidance. The structure of this HMP follows the four-phase planning process recommended by FEMA and summarized in Figure 1-3.

Figure 1-2. Putnam County Hazard Mitigation Planning Process



As noted earlier, the HMP is organized into two volumes: Volume I includes all information that applies to the entire planning area (Putnam County) and Volume II includes participating jurisdiction-specific information.

Volume I of this Plan includes the following sections:

**Section 1:** Introduction: Overview of participants and planning process.

**Section 2:** Plan Adoption: Information regarding the adoption of the HMP by Putnam County and each participating jurisdiction.



**Section 3:** Planning Process: A description of the HMP methodology and development process; Steering Committee, Planning Committee and stakeholder involvement efforts; and a description of how this HMP will be incorporated into existing programs.

**Section 4:** County Profile: An overview of Putnam County, including: (1) general information, (2) economy, (3) land use trends, (4) population and demographics, (5) general building stock inventory, and (6) critical facilities.

**Section 5:** Risk Assessment: Documentation of the hazard identification and hazard risk ranking process, hazard profiles, and findings of the vulnerability assessment (estimates of the impact of hazard events on life, safety and health; general building stock; critical facilities and the economy); description of the status of local data; and planned steps to improve local data to support mitigation planning.

**Section 6:** Mitigation Strategies: Information regarding the mitigation goals and objectives identified by the Steering Committee in response to priority hazards of concern and the process by which county and local mitigation strategies have been developed or updated.

**Section 7:** Plan Maintenance Procedures: System established by the Steering Committee to continue to monitor, evaluate, maintain and update the HMP.

Volume II of this plan includes the following sections:

**Section 8:** Planning Partnership: Description of the planning partnership, their responsibilities, and jurisdictional annexes.

**Section 9:** Jurisdictional Annexes: A jurisdiction-specific annex for Putnam County and each participating jurisdiction containing their hazards of concern, hazard risk ranking, capability assessments, mitigation actions, action prioritization specific only to Putnam County or that jurisdiction, progress on prior mitigation activities (as applicable), and a discussion of prior local hazard mitigation plan integration into local planning processes.

Appendices include the following:

**Appendix A: Resolution of Plan Adoption:** Resolutions from the county and each jurisdiction will be included as they formally adopt the HMP update.

**Appendix B: Participation Matrix:** A matrix is presented to give a broad overview of who attended meetings and when input was provided to the HMP update. Letters of Intent to Participate as described in Section 3 are also included in this appendix.

**Appendix C: Meeting Documentation:** Agendas, attendance sheets, minutes, and other documentation (as available and applicable) of planning meetings convened during the development of the plan.

**Appendix D: Public and Stakeholder Outreach Documentation:** Documentation of the public and stakeholder outreach effort including webpages, informational materials, public and stakeholder meetings and presentations, surveys, and other methods used to receive and incorporate public and stakeholder comment and input to the plan process.

**Appendix E: County Profile and Risk Assessment Supplementary Data:** Details regarding critical facilities from Section 4 (County Profile) and vulnerability assessments conducted for the hazards of concern (Section 5 – Risk Assessment).



**Appendix F: Critical Facilities:** Critical facilities included in the risk assessment.

**Appendix G: FEMA Plan Review Tools:** Examples of plan review templates available to support annual plan review.

**Appendix H: Putnam County Mitigation Catalog:** Documentation of the broad range of actions identified during the mitigation process.

**Appendix I: Linkage Procedure:** Procedure to define the requirements established by the Putnam County Steering Committee and all planning partners for dealing with the increase or decrease in planning partners included in this plan.

**Appendix J: FEMA Plan Review Matrix:** Summary of plans reviewed, including documentation of content relevant to the mitigation planning process.

## 1.2 The Plan Update – What is Different?

Putnam County’s initial HMP was initially approved by FEMA and adopted by participating jurisdictions in 2015. This 2021 update builds on the 2015 plan and specifically includes the following changes or enhancements.

- The County prepared this plan in accordance with the 2017 NYS DHSES guidance which provides a framework for a more concise and focused mitigation plan.
- The use of updated data and tools provided a more detailed and accurate risk assessment. The risk assessment was prepared to better support future grant applications by providing risk and vulnerability information that would directly support the measurement of “cost-effectiveness” required under FEMA mitigation grant programs.
- The County re-visited the hazard event history in light of a number of factors including event history and future conditions, to identify a number of new hazards to be included in the plan. Other hazards were removed from the hazards that were deemed to pose a significant impact on the planning area.
- The plan identified implementable actions rather than strategies, with more detailed information to serve as the basis for policy and funding decisions and represent measurable impacts on resiliency and mitigation progress. Strategies provide direction, but actions are fundable under grant programs.

**Table 1-3. Plan Changes Crosswalk**

44 CFR Requirement	2015 Plan	2021 Updated Plan
<p><i>Requirement §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include:</i></p> <p>(1) <i>An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;</i></p> <p>(2) <i>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</i></p> <p>(3) <i>Review and incorporation, if appropriate, of existing plans,</i></p>	<p>The 2015 plan followed an outreach strategy utilizing multiple media developed and approved by the Steering Committee. This strategy involved the following:</p> <ul style="list-style-type: none"> <li>• Establishment of a hazard mitigation plan website.</li> <li>• Press releases.</li> <li>• Use of a public information survey.</li> </ul> <p>Stakeholders were identified and coordinated with throughout the process. A comprehensive review of relevant plans and programs was performed by the planning team.</p>	<p>Building upon the success of the 2015 plan, the 2021 planning effort deployed a similar public engagement methodology. The plan included the following enhancements:</p> <ul style="list-style-type: none"> <li>• More extensive use of social media.</li> <li>• Web-deployed survey.</li> <li>• Updated informational brochure.</li> <li>• Tailored stakeholder survey.</li> <li>• Neighboring county survey.</li> </ul> <p>Citizen and stakeholder feedback was provided to the planning partners to support the identification of relevant mitigation projects.</p> <p>As with the 2015 plan, the 2021 planning process identified key</p>



44 CFR Requirement	2015 Plan	2021 Updated Plan
<p><i>studies, reports and technical information.</i></p>		<p>stakeholders and coordinated with them throughout the process. A comprehensive review of relevant plans and programs was performed by the planning team.</p>
<p><i>§201.6(c)(2): The plan shall include a risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards.</i></p>	<p>The 2015 plan included a comprehensive risk assessment of hazards of concern. Risk was defined as (probability x impact), where impact is the impact on people, property, and economy of the planning area. All planning partners ranked risk as it pertains to their jurisdiction. The potential impacts of climate change are discussed for each hazard.</p>	<p>A revised methodology, using new, updated data, was deployed for the 2021 plan update. Climate change and adaptive capacity were incorporated into the hazard ranking approach and helped to frame the development of County and municipal mitigation strategies.</p>
<p><i>§201.6(c)(2)(i): [The risk assessment] shall include a) description of the ... location and extent of all-natural 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.</i></p>	<p>The 2015 plan presented a risk assessment of each hazard of concern. Each section included the following:</p> <ul style="list-style-type: none"> <li>• Hazard profile, including maps of extent and location, previous occurrences, and probability of future events.</li> <li>• Climate change impacts on future probability.</li> <li>• Impact and vulnerability on life, health, safety, general building stock, critical facilities, and economy.</li> <li>• Impact on people, property, critical facilities, and environment.</li> <li>• Future growth and development.</li> <li>• Additional data and next steps.</li> <li>• Overall vulnerability assessment.</li> <li>• Identified issues.</li> </ul>	<p>A similar format, using new and updated data, was used for the 2019 plan update. Each section of the risk assessment includes the following:</p> <ul style="list-style-type: none"> <li>• Hazard profile, including maps of extent and location, previous occurrences, and probability of future events.</li> <li>• Climate change impacts on future probability using the best available data for New York State.</li> <li>• Vulnerability assessment includes: impact on life, safety, and health, general building stock, critical facilities/lifelines, and the economy, as well as future changes that could impact vulnerability.</li> <li>• The vulnerability assessment also includes changes in vulnerability since the 2015 plan.</li> <li>• Identified issues have been documented in each hazard profile.</li> </ul>
<p><i>§201.6(c)(2)(ii): [The risk assessment] shall include a) description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i). This description shall include an overall summary of each hazard and its impact on the community.</i></p>	<p>Vulnerability was assessed for all hazards of concern. The HAZUS-MH computer model was used for the severe storm, earthquake, and flood hazards. These were Level 2 analyses using County data. Site-specific data on county-identified critical facilities were entered into the HAZUS-MH model. HAZUS-MH outputs were generated for other hazards by applying an estimated damage function to an asset inventory extracted from <b>HAZUS-MH-MH</b>.</p>	<p>The same methodology was deployed for the 2021 plan update, using new and updated data. Additional hazards of concern include the following:</p> <ul style="list-style-type: none"> <li>• Disease Outbreak</li> <li>• Drought</li> <li>• Harmful Algal Bloom</li> <li>• Terrorism</li> </ul>
<p><i>§201.6(c)(2)(ii): [The risk assessment] must also address National Flood Insurance Program insured structures that have been repetitively damaged floods.</i></p>	<p>A summary of NFIP insured properties including an analysis of repetitive loss property locations was included in the plan.</p>	<p>Limited, aggregate NFIP information was used for the 2021 plan update due to limitations on the dissemination of NFIP data from FEMA.</p>
<p><i>Requirement §201.6(c)(2)(ii)(A): The plan should describe vulnerability in terms of</i></p>	<p>A complete inventory of the numbers and types of buildings exposed was</p>	<p>The same methodology was deployed for the 2021 plan update using new</p>



44 CFR Requirement	2015 Plan	2021 Updated Plan
<i>the types and numbers of existing and future buildings, infrastructure and critical facilities located in the identified hazard area.</i>	generated for each hazard of concern. The Steering Committee defined “critical facilities” for the planning area, and these were inventoried by exposure. Each hazard profile provides a discussion on future development trends.	and updated data and expanded with the identification of “lifeline” facilities.
<i>Requirement §201.6(c)(2)(ii)(B): [The plan should describe vulnerability in terms of an] estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(i)(A) and a description of the methodology used to prepare the estimate.</i>	Loss estimates were generated for all hazards of concern. These were generated by HAZUS-MH for the severe storm, earthquake, and flood hazards. For the other hazards, loss estimates were generated by applying a regionally relevant damage function to the exposed inventory and a damage function was applied to an asset inventory, if possible with available data. In all cases, The asset inventory was the same for all hazards and was generated in HAZUS-MH.	The same methodology was deployed for the 2021 plan update using new and updated data.
<i>Requirement §201.6(c)(2)(ii)(C): [The plan should describe vulnerability in terms of] 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.</i>	There is a summary of anticipated development in the County profile, as well as in each individual annex.	The same methodology was deployed for the 2021 plan update using new and updated data.
<i>§201.6(c)(3):[ The plan shall include a mitigation strategy that provides the jurisdiction’s blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools.]</i>	The 2015 plan contained goals, objectives and actions. The mission statement, goals and objectives were regional and covered all planning partners. Each planning partner identified actions that could be implemented within their capabilities. The actions were jurisdiction-specific and strove to meet multiple objectives. All objectives met multiple goals and stand alone as components of the plan. Each planning partner completed an assessment of its planning, regulatory, technical, and financial capabilities.	The same methodology for setting goals, objectives, and actions was applied to the 2021 plan update. The Steering Committee developed an over-arching mission statement focus the plan. It reviewed and updated the goals, and objectives for the plan to reflect current needs and policy. Each planning partner used the progress reporting from the plan maintenance and evaluated the status of actions identified in the 2015 plan. Actions that were completed or no longer considered to be feasible were removed. The balance of the actions was carried over to the 2021 plan, and in some cases, new actions were added to the action plan.
<i>Requirement §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.</i>	The Steering Committee identified goals, and objectives targeted specifically for this hazard mitigation plan. These planning components supported the actions identified in the plan.	The same methodology for setting goals, objectives, and actions was applied to the 2021 plan update. The Steering Committee developed a mission statement to focus the plan. It reviewed and updated goals, and objectives for the plan to include an emphasis on increased resiliency. This resulted in the finalization of five goals and 28 objectives to frame the plan.
<i>Requirement §201.6(c)(3)(ii): [The mitigation strategy shall include a] section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each</i>	The 2015 plan includes a suite of mitigation strategies/actions on the County and municipal levels developed through a facilitated process.. A table in the action plan section analyzes each action by	The 2021 plan includes a hazard mitigation catalog that was developed through a facilitated process. This catalog identifies actions that manipulate the hazard, reduce exposure to the hazard, reduce



44 CFR Requirement	2015 Plan	2021 Updated Plan
<i>hazard, with particular emphasis on new and existing buildings and infrastructure.</i>	mitigation type to illustrate the range of actions selected.	vulnerability, or increase mitigation capability. The catalog further segregates actions by scale of implementation. A table in the action plan section analyzes each action by mitigation type to illustrate the range of actions selected.
<i>Requirement: §201.6(c)(3)(ii): [The mitigation strategy] must also address the jurisdiction’s participation in the National Flood Insurance Program, and continued compliance with the program’s requirements, as appropriate.</i>	All municipal planning partners that participate in the NFIP identified an action stating their commitment to maintain compliance and good standing under the program.	A review of municipal NFIP activities is provided in each municipal annex. Ongoing participation in the NFIP for municipalities was included in ongoing capabilities.
<i>Requirement: §201.6(c)(3)(iii): [The mitigation strategy shall describe] 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.</i>	Each recommended action was prioritized using STAPLEE methodology.	A revised methodology based on the STAPLEE criteria and using new and updated data was used for the 2021 plan update.
<i>Requirement §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.</i>	The 2015 plan included a maintenance strategy to monitor, evaluate, and update the plan throughout its performance period.	The 2021 plan details a plan maintenance strategy similar to that of the initial plan.
<i>Requirement §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 improvement plans, when appropriate.</i>	The 2015 plan details recommendations for incorporating the plan into other planning mechanisms.	The 2021 plan details recommendations for incorporating the plan into other planning mechanisms such as the following: <ul style="list-style-type: none"> <li>• Comprehensive Plan.</li> <li>• Emergency Response Plan.</li> <li>• Capital Improvement Programs.</li> <li>• Municipal Code.</li> </ul>
<i>Requirement §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.</i>	The 2015 plan details a strategy for continuing public involvement.	The 2015 plan maintenance strategy was carried over to the 2021 plan. In addition, the County will use a proprietary online tool to support the annual progress reporting of mitigation actions.
<i>Requirement §201.6(c)(5): [The local hazard mitigation plan shall include] documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan (e.g., City Council, County Commissioner, Tribal Council).</i>	10 planning partners participated in the 2015 planning process.	The 2021 plan achieves DMA compliance for 10 planning partners. Resolutions for each partner adopting the plan can be found in Appendix A of this volume.