



# SECTION 1. INTRODUCTION

## 1.1 BACKGROUND

Communities, residents and businesses have been faced with continually increasing costs associated with both natural and man-made hazards. Hazard mitigation is the first step in reducing risk and is the most effective way to reduce costs associated with hazards. Dutchess County, and the municipalities located therein, have developed this Dutchess County Hazard Mitigation Plan (HMP, also referred herein as the “Hazard Mitigation Plan” or the “plan”), which is a multi-jurisdictional, multi-hazard mitigation plan. This HMP includes countywide analysis and assessment of hazards, risk and capabilities and represents both an update of the 2006 “Dutchess County Hazard Mitigation Plan” (single jurisdiction plan) as well as an update of local single- and multi-jurisdictional hazard mitigation plans (HMPs) developed previously by a number of the participating Dutchess County municipalities. The plan has been prepared following the requirements of the federal Disaster Mitigation Act of 2000 (DMA 2000). DMA 2000 amends the 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 the development of multi-jurisdictional hazard mitigation plans, and the New York State Division of Homeland Security and Emergency Services (DHSES) also supports plan development for jurisdictions in New York State.

**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, 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. DMA 2000 is intended to facilitate cooperation between state and local authorities, prompting them to work together. This enhanced planning will better enable local and State governments to articulate accurate needs for mitigation, resulting in faster allocation of funding and more effective risk reduction projects.

### 1.1.1 DMA 2000 Origins -The Robert T. Stafford Disaster Relief and Emergency Assistance Act

The **Federal Emergency Management Agency (FEMA)** estimates that for every dollar spent on damage prevention (mitigation), twice that amount is saved through avoided post-disaster damage repair.

In the early 1990s, a new federal policy regarding disasters began to evolve. Rather than simply 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 simply 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, other costs associated with disasters, such as the time lost from productive activity by business and industries, are minimized.

DMA 2000 provides an opportunity for States, tribes and local governments to take a new and revitalized approach to mitigation planning. DMA 2000 amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act by repealing the previous mitigation planning provisions (Section 409) and replacing them with a new set of requirements (Section 322). This section 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 can be taken by the community to mitigate those hazards—before disaster strikes. For communities to remain eligible for hazard mitigation assistance from the federal government, they 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 will help prepare citizens and government agencies to better respond when disasters occur. Also, mitigation planning allows Dutchess County as a whole, as well as the participating Dutchess County municipalities, to remain eligible for mitigation grant funding for mitigation projects that will reduce the impact of future disaster events. The long-term benefits of mitigation planning include:

- An increased understanding of hazards faced by Dutchess County and their inclusive municipalities
- A more sustainable and disaster-resistant community
- 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 and reduced repair costs

### 1.1.3 Organizations Involved in the Mitigation Planning Effort

Dutchess County and the participating jurisdictions intend to implement this HMP with full coordination and participation of County and local departments, organizations and groups, as well as by coordinating with 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 and in the jurisdictional annexes in Section 9. In addition to Dutchess County, all of the 30 municipal governments in the County have participated in the 2015 planning process as indicated in Table 1-1 below.

Table 1-1. Participating Dutchess County Jurisdictions

Jurisdictions		
Dutchess County		
Town of Amenia	Town of Milan	Town of Red Hook
City of Beacon	Village of Millbrook	Village of Red Hook
Town of Beekman	Village of Millerton	Town of Rhinebeck
Town of Clinton	Town of North East	Village of Rhinebeck
Town of Dover	Town of Pawling	Town of Stanford
Town of East Fishkill	Village of Pawling	Village of Tivoli
Town of Fishkill	Town of Pine Plains	Town of Union Vale



Village of Fishkill	Town of Pleasant Valley	Town of Wappinger
Town of Hyde Park	City of Poughkeepsie	Village of Wappinger Falls
Town of LaGrange	Town of Poughkeepsie	Town of Washington

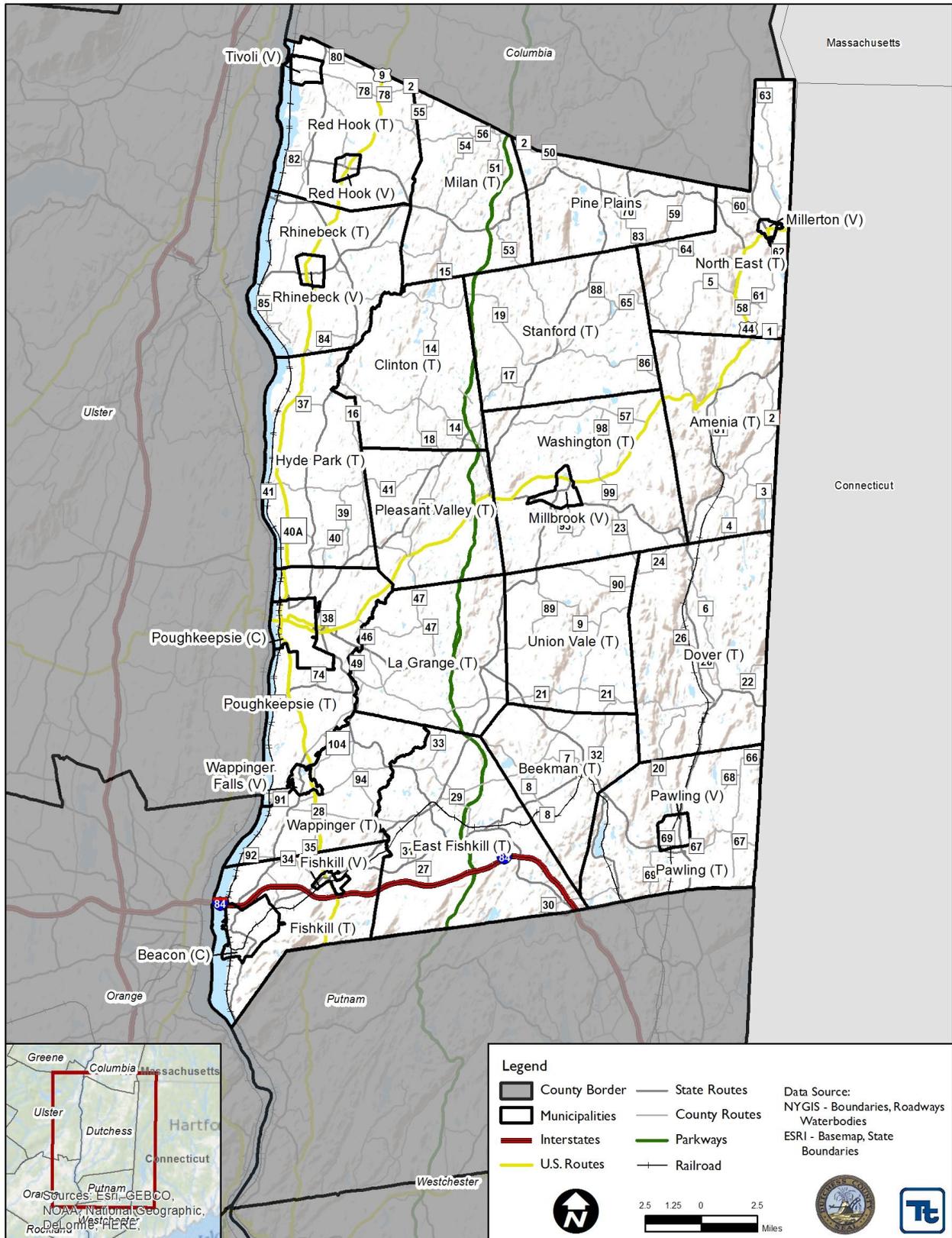
### **Multiple Agency Support for Hazard Mitigation**

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). Project management and oversight of the planning process was provided by the Dutchess County Department of Emergency Response (DC DER) and the Dutchess County Hazard Mitigation Steering Committee. 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, while Appendix D provides further documentation of the broader level of municipal involvement.



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





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 2013
- 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. 2004. “How-To Guide for Using HAZUS-MH for Risk Assessment.” FEMA Document No. 433. February.
- FEMA Mitigation Planning How-to Series (FEMA 386-1 through 4, 2002), available at: <http://www.fema.gov/fima/planhowto.shtm>.

Table 1-2 summarizes the requirements outlined in the DMA 2000 Interim Final Rule and where each of these requirements 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



## **Organization**

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The Dutchess County HMP has been organized into a two-volume plan to facilitate use of this plan as a resource for each participant. Volume I provides information on the overall planning process, and the natural hazard profiling and vulnerability assessments which served as a basis for the understanding of risk and identification of appropriate mitigation actions. As such, Volume I is intended for use as a resource for on-going mitigation analysis. Volume II consists of an annex dedicated to each participating jurisdiction. Each annex summarizes the jurisdiction's legal, regulatory, and fiscal capabilities; vulnerabilities to natural hazards; status of past mitigation actions; and provides 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 for each jurisdiction to record and maintain their local aspect of the countywide plan.

## **Hazards of Concern**

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Dutchess County and participating jurisdictions reviewed the natural hazards that caused measurable impacts based on events, losses and information available since the development of the original Dutchess County HMP (2006) and other single- and multi-jurisdictional HMPs within the County. Dutchess County and participating jurisdictions evaluated the risk and vulnerability due to each of the hazards of concern on the assets of each participating jurisdiction. Although the resulting hazard risk rankings varied for each jurisdiction, the summary risk rankings corresponded with that of Dutchess County and are indicated in each jurisdictional annex. The hazard risk ranks were used to focus and prioritize individual jurisdictional mitigation strategies.

## **Goals and Objectives**

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The plan developed mitigation goals [and objectives] as a basis for the planning process and to guide the selection of appropriate mitigation actions addressing all hazards of concern. 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 within Section 6.

## **Plan Integration into Other Planning Mechanisms**

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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 hazard mitigation plan integrate and coordinate with, and complement, those mechanisms.

The "Capability Assessment" section of Chapter 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 Chapter 9, the County and each participating jurisdiction have identified how they have integrated hazard risk management into their existing planning, regulatory and operational/administrative framework ("integration capabilities"), and how they intend to promote this integration ("integration actions").

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 7.



## Implementation of Prior and Existing Local Hazard Mitigation Plans

The status of the mitigation projects identified in prior or existing local HMPS are provided in Section 6 (Mitigation Strategy) and Section 9 (Jurisdictional Annexes) of the plan. Numerous projects and programs have been implemented that have reduced hazard vulnerability to assets in the planning area. Those projects not completed have been reevaluated, modified as necessary and incorporated into this plan. The County and municipal annexes describe these mitigation activities in more detail, and plan maintenance procedures (Section 7) have been developed to encourage thorough integration with local decisions and processes and regular review of implementation progress.

### 1.1.4 Implementation of the Planning Process

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

- Developed a Steering Committee and countywide planning partnership with municipalities and stakeholders,
- Reviewed the 2006 Dutchess County Hazard Mitigation Plan (single jurisdiction plan), and prior and existing single- and multi-jurisdictional local HMPs within the County,
- Identified those hazards that are of greatest concern to the community (hazards of concern) to be included in the plan,
- Profiled these hazards,
- Estimated the inventory at risk and potential losses associated with these hazards,
- Developed appropriate hazard mitigation goals [and objectives],
- Reviewed mitigation strategies identified in prior and existing local HMPS to indicate progress,
- 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 DMA 2000, Dutchess County and participating jurisdictions have informed the public and provided opportunities for public comment and input. In addition, numerous agencies and stakeholders have participated as core or support members, providing input and expertise throughout the planning process.

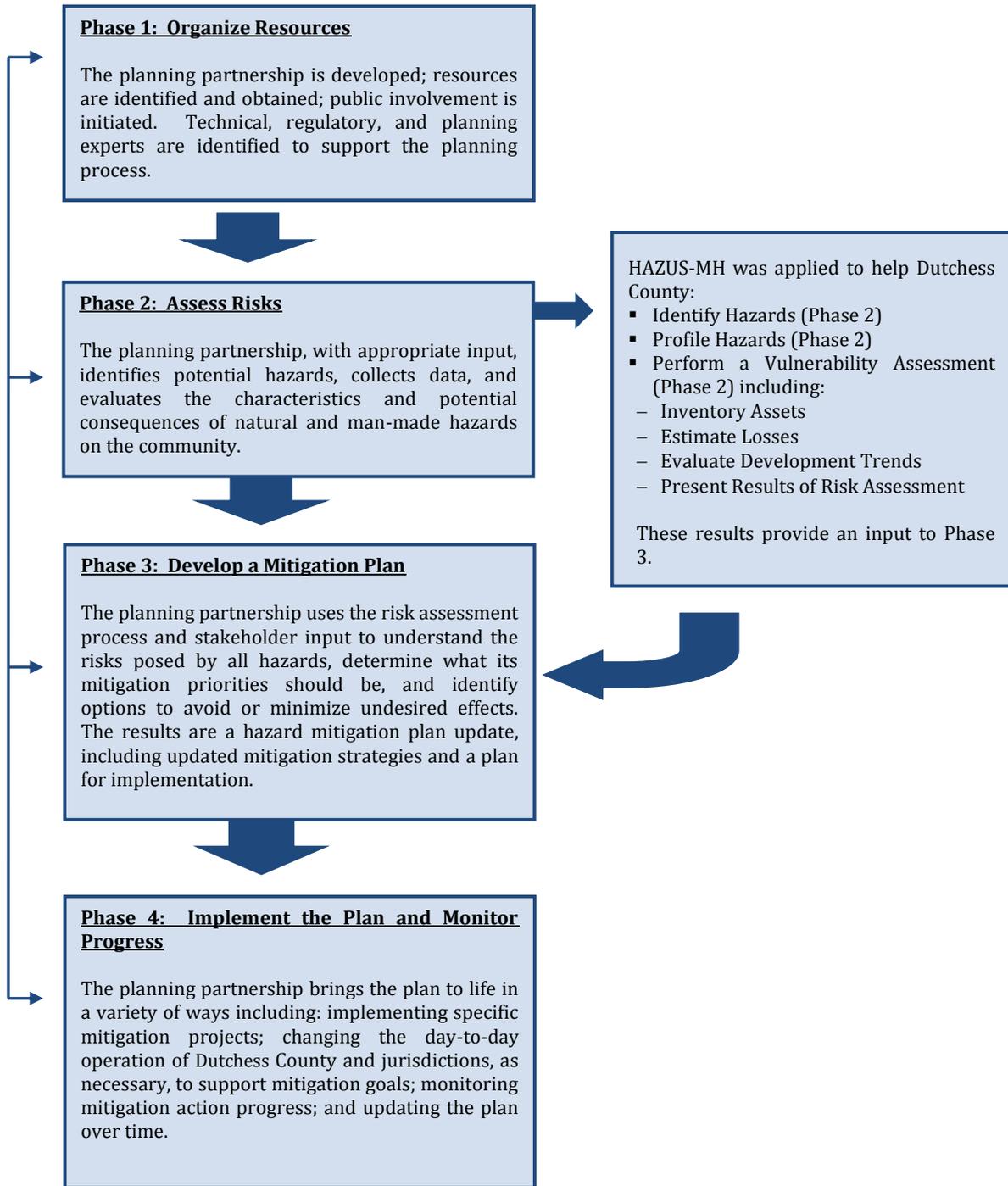
This Hazard Mitigation Plan documents the process and outcomes of Dutchess County and the jurisdictions' efforts. Additional information on the plan process is included in Section 3, Planning Process. Documentation that the prerequisites for plan approval have been met is included in Section 2, Plan Adoption.

### 1.1.5 Organization of This Mitigation Plan

This Plan was organized in accordance with FEMA and NYS DHSES guidance. The structure of this Plan follows the four-phase planning process recommended by FEMA and summarized in Figure 1-2.



Figure 1-2. Dutchess County Hazard Mitigation Planning Process





The Plan is organized into two volumes: Volume I includes all information that applies to the entire planning area (Dutchess 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 Plan by Dutchess County and each participating jurisdiction.

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

**Section 4:** County Profile: An overview of Dutchess 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: The system established by the Steering Committee to continue to monitor, evaluate, maintain and update the Plan.

Volume II of this plan includes the following sections:

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

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

Appendices include:

**Appendix A:** Sample Resolution of Plan Adoption: Documentation that supports the plan approval signatures included in Section 2 of this plan.

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

**Appendix C:** 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 D:** Participation Matrix

**Appendix E:** Action Worksheet Template and Instructions

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

**Appendix G:** Critical Facility Vulnerability Assessment Results