

SECTION 1. INTRODUCTION

1.1 PURPOSE

Rockland County and its participating jurisdictions (the Planning Partnership) have prepared this hazard mitigation plan (HMP) to better protect residents and property throughout Rockland County from the effects of hazard events. The HMP demonstrates the Planning Partnership’s commitment to reducing risk from hazards, increasing resilience overall, and helping decision-makers integrate mitigation into their day-to-day processes. It also positions the Planning Partnership for eligibility for Federal Emergency Management Agency (FEMA) Hazard Mitigation Assistance (HMA) grant programs, which include the Hazard Mitigation Grant Program (HMGP), Building Resilient Infrastructure and Communities (BRIC), and Flood Mitigation Assistance (FMA). This HMP aligns with the planning elements of the National Flood Insurance Program’s (NFIP) Community Rating System (CRS), which provides for lower flood insurance premiums in participating communities.

1.2 BACKGROUND

An 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 damage to lives, property, and the economy from future disasters. HMPs commonly recommend mitigation projects such as property acquisitions to remove structures from high-risk areas, structural elevations to protect from future flood events, upgrades to critical public facilities, or infrastructure improvements. Ultimately, such actions reduce vulnerability, and communities are able to recover more quickly from disasters. The Planning Partnership demonstrated its commitment to reducing disaster losses when it developed its initial HMP in 2013 and updated it in 2018. The partnership continues to update information upon which to base a successful mitigation strategy that will reduce the impacts of natural disasters and increase local resiliency.

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.

The federal Disaster Mitigation Act of 2000 (DMA 2000) requires local government agencies to develop and update their HMP every five years. This plan serves as the required update to the 2018 Rockland County HMP. During the

For hazard mitigation planning, the FEMA definition of **local government** includes most governmental agencies below the state level.

For the Rockland County HMP, references to local governments generally refer to government agencies below the county level—specifically, towns and villages.

course of the planning process, the entire plan was updated with a focus on examining changes in vulnerability due to hazard events, reviewing capabilities and how they are used to implement hazard mitigation, reviewing the mitigation strategy, and identifying new initiatives to increase overall resiliency throughout Rockland County.

1.3 PLAN ORGANIZATION

The Rockland County HMP 2024 update is a three-volume plan in alignment with the 2023 FEMA Local Mitigation Planning Handbook, the FEMA Local Mitigation Plan Review Tool, the 2023 FEMA Local Mitigation Planning Policy

Guide, and planning requirements of the New York State Department of Homeland Security and Emergency Services (NYS DHSES).

Volume I is a resource for ongoing mitigation analysis. It includes a description of the County and its jurisdictions as well as information on mitigation planning and how the risk assessment and capability assessment were performed.

Volume II consists of annexes for each participating jurisdiction. Each annex summarizes the jurisdiction’s planning, regulatory, and fiscal capabilities; evaluates vulnerabilities to hazards; describes the status of past mitigation actions; and provides a specific mitigation strategy. The annexes provide each jurisdiction with an expedient resource for implementing mitigation projects and maximizing future grant opportunities.

The third volume of the HMP includes appendices that present supporting information and details on the basic content of the plan. Table 1-1 describes the HMP’s content by volume, section, and appendix.

Table 1-1. Rockland County 2024 HMP Update Contents

Section Number	Section Name	Contents
Volume I		
Section 1	Introduction	Overview of the planning process and organization of the plan.
Section 2	Planning Process	Description of the HMP development process, Planning Partnership and stakeholder involvement efforts, and how the HMP will be incorporated into existing programs.
Section 3	County Profile	Overview of the County, including physical setting, past hazard events, land use trends, population trends, general building stock, and critical facilities and community lifelines.
Section 4	Risk Assessment	Documentation of the hazard identification and risk ranking process, hazard profiles, and findings of the vulnerability assessment (estimates of the impact of hazard events on life, health, and safety; general building stock; critical facilities and community lifelines; the economy; and the environment). Description of the status of local data and planned steps to improve local data to support mitigation planning.
Section 5	Capability Assessment	A summary of existing plans, programs, and regulatory mechanisms at all levels of government (federal, state, county, local) that support hazard mitigation within the County.
Section 6	Mitigation Strategy	Presentation of mitigation goals and objectives for addressing priority hazards of concern and the process by which Planning Partnership mitigation strategies have been developed.
Section 7	Plan Maintenance	System established to continue to monitor, evaluate, maintain, and update the HMP.
Volume II		
Section 8	Planning Partnership	Description of the Planning Partnership, member responsibilities, and the process of preparing jurisdictional annexes.
Section 9	Jurisdictional Annexes	Jurisdiction-specific annexes for Rockland County and participating jurisdictions, containing each jurisdiction’s hazards of concern, hazard risk ranking, capability assessment, mitigation actions, action prioritization, progress on prior mitigation activities, and prior HMP integration into local planning processes.
Appendices		
Appendix A	Plan Adoption	Resolutions from Rockland County and all participating jurisdictions, included as each formally adopts the HMP update.
Appendix B	Participation Documentation	Matrix listing who attended meetings and provided input to the HMP update. Worksheets submitted during workshops conducted throughout the planning process.
Appendix C	Meeting Documentation	Agendas, attendance sheets, minutes, and other documentation 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.

Section Number	Section Name	Contents
Appendix E	Mitigation Strategy Supplementary Data	Documentation of the broad range of actions identified during the mitigation process; types of mitigation actions; the mitigation catalog developed using jurisdiction input; and potential mitigation funding sources.
Appendix F	Plan Maintenance Tools	Example plan review tools and templates available to support annual plan review.
Appendix G	Critical Facilities	A full list of critical facilities identified for the update of the HMP. Due to the sensitive nature of the information, details have been redacted.
Appendix H	Linkage Procedures	Steps that fire districts, utility districts, school districts, and any other eligible local government (as defined in 44 Code of Federal Regulations [CFR] 201.2) within the County can take to join this plan as a participating jurisdiction and to achieve approved status.

1.4 THE PLAN UPDATE – WHAT IS DIFFERENT?

Both the planning process and the content of the 2018 HMP have been enhanced and updated for this 2024 HMP. This update focused on increased efforts to actively engage stakeholders and the public, as well as the continued education of the Planning Partnership about mitigation and available grant funding opportunities. The mitigation strategy was updated to include one mitigation action for every hazard of concern. Further, the sections in the 2024 HMP have been realigned to increase the readability of the plan. The following summarizes process and plan changes that differ from the 2018 process and HMP:

- There was a strong desire on the part of Rockland County for this plan to be a user-friendly document that is understandable to the general public and not overly technical and provide images and text that can easily be used as tools to better communicate local hazard risk. This was done through updating the County’s HMP webpage and developing an interactive ArcGIS Online StoryMap, which can be found at the following links:
 - <https://rocklandhmp.com/>
 - <https://www.rocklandgis.com/portal/apps/storymaps/stories/478d7d6f95eb4247a40ce78629154316>
- Section 3 (County Profile) has been streamlined and updated in the following ways:
 - Provides specific and detailed information about Rockland County.
 - Contains updated information regarding the County’s physical setting, population and demographics and trends, socially vulnerable populations, general building stock, land use and trends, and potential new development.
 - Critical facilities identified as community lifelines using FEMA’s lifeline definition and categories.
- Section 4 (Risk Assessment) includes identification of hazards of concern that impact Rockland County, methodology and tools used to conduct the risk assessment, hazard profiles and vulnerability assessment for the identified hazards of concern, and the overall hazard ranking:
 - Hazard profiles for each hazard of concern provide the following information: hazard description, location, extent, previous occurrences and losses, probability of future occurrences, and climate change impacts.
 - The updated vulnerability assessment is based on new inventory data and hazard data.
 - FEMA community lifelines are assessed. All jurisdictions that identified critical facilities considered lifelines in accordance with FEMA’s community lifeline definition.

- The hazard ranking methodology was expanded to account for socially vulnerable populations, adaptive capacity, and climate change.
- Section 5 (Capability Assessment) is now a standalone section that has been expanded to include federal, state, and County capabilities. Jurisdiction-specific capabilities are expanded in each jurisdictional annex (Section 9).
- Section 6 (Mitigation Strategy) describes how the mitigation strategy was reviewed and updated for the 2024 HMP process. Goals and objectives were updated to align with County and local priorities and the 2019 New York State HMP. Jurisdiction-specific mitigation strategies are now included in each jurisdictional annex (Section 9).
- An enhanced mitigation strategy process was used to develop a robust action plan:
 - A mitigation toolbox was built to assist with mitigation action identification.
 - Utilizing the risk assessment and capability assessment results, problem statements were drafted by each municipality and used to inform the mitigation action development.
 - Concrete actions are identified within the strategies. Strategies provide direction, but actions are fundable under grant programs. The identified actions are designed to meet multiple measurable objectives, so that each planning partner can measure the effectiveness of its mitigation actions.
- The plan maintenance strategy (Section 7) is more clearly defined to provide a roadmap for the annual monitoring of the HMP.
- Jurisdictional annexes (Section 9) have been enhanced to include the following:
 - Expanded capability assessment to include additional state planning mechanisms as well as information regarding plan integration.
 - Identification of the NFIP floodplain administrator as part of the Planning Partnership.
 - Listing of individuals who contributed to the annex.
 - Expansion of the critical facility and lifeline flood hazard exposure table to include a mitigation action, if appropriate.
 - A user-friendly presentation of the hazard ranking results.
 - A revised previous mitigation strategy status table to more clearly identify 2018 actions to be carried over to the 2024 HMP update.
 - A more detailed mitigation action table that specifies the problem statement and the proposed solution. More detail is also reflected in the mitigation action worksheets.
 - A table that summarizes the actions by the type of action and the hazards addressed.
- To increase public and stakeholder engagement, the following efforts were made:
 - All Planning Partnership meetings were made open to the public.
 - Social media was used to inform the public meetings and to take the public survey.
 - The County maintained a website focusing on the HMP and the process. The site provided project updates, resources, links to the draft plan, and information on upcoming and previous meetings.
 - A StoryMap was developed to provide information about the HMP planning process and an opportunity for virtual public and stakeholder participation.

- Stakeholder-specific surveys were deployed to collect input from stakeholders that provide services to Rockland County.

Table 1-2 compares how federal hazard mitigation planning requirements were met in the 2018 HMP and the updated 2024 HMP.

Table 1-2. Rockland County HMP Changes Crosswalk

44 CFR Requirement	2018 Plan	2024 Updated Plan
<p>Requirement §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include:</p> <ul style="list-style-type: none"> • An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval; • 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 • Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information. 	<p>The 2018 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"> • Public participation on an oversight Steering Committee. • Establishment of a plan informational website. • Press releases. • Use of a public information survey. • Stakeholders were identified and coordinated with throughout the process. • A comprehensive review of relevant plans and programs was performed by the Planning Partnership. 	<p>Building upon the success of the 2018 plan, the 2024 planning effort deployed the same public engagement methodology. The plan included the following enhancements:</p> <ul style="list-style-type: none"> • Using social media. • Web-deployed survey. • Informational brochure. • Public website specific to the HMP planning process. • As with the 2018 plan, the 2024 planning process identified key stakeholders and coordinated with them throughout the process. A comprehensive review of relevant plans and programs was performed by the Planning Partnership.
<p>§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.</p>	<p>The 2018 plan included a comprehensive risk assessment of hazards of concern. Risk was defined as probability times impact, where impact is the impact on people, property, and economy of the County. All planning partners ranked risk as it pertains to their jurisdiction. The potential impacts of climate change are discussed for each hazard.</p>	<p>The same methodology, using new, updated data, was deployed for the 2024 plan update.</p>
<p>§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.</p>	<p>The 2018 plan presented a risk assessment of each hazard of concern. Each section included the following:</p> <ul style="list-style-type: none"> • Hazard profile, including maps of extent and location, previous occurrences, and probability of future events. • Climate change impacts on future probability. • Impact and vulnerability on life, health, safety, general building stock, critical facilities, and economy. • Impact on people, property, critical facilities, and environment. • Future growth and development. • Additional data and next steps. • Overall vulnerability assessment. 	<p>The same format, using new and updated data, was used for the 2024 plan update. Each section of the risk assessment includes the following:</p> <ul style="list-style-type: none"> • Hazard profile, including maps of extent and location, previous occurrences, and probability of future events. • Climate change impacts on future probability using the best available data for New York State. • Vulnerability assessment includes impact on life, safety, and health, general building stock, critical facilities, the economy, and the environment, as well as future changes that could impact vulnerability. • The vulnerability assessment also includes changes in vulnerability since the 2018 plan.

44 CFR Requirement	2018 Plan	2024 Updated Plan
<p>§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.</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 was 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 HAZUS-MH.</p>	<p>The same methodology was deployed for the 2024 plan update, using new and updated data and the most current version of Hazus. Dam failure was included as a stand-alone hazard of concern; previously, the hazard was included with the flood hazard.</p>
<p>§201.6(c)(2)(ii): [The risk assessment] must also address National Flood Insurance Program insured structures that have been repetitively damaged floods.</p>	<p>A summary of NFIP-insured properties including an analysis of repetitive loss property locations was included in the plan.</p>	<p>The same methodology was deployed for the 2024 plan update using new and updated data.</p>
<p>Requirement §201.6(c)(2)(ii)(A): The plan should describe vulnerability in terms of the types and numbers of existing and future buildings, infrastructure and critical facilities located in the identified hazard area.</p>	<p>A complete inventory of the numbers and types of buildings exposed was generated for each hazard of concern. The Steering Committee defined “critical facilities” for the County, and these were inventoried by exposure. Each hazard profile provides a discussion on future development trends.</p>	<p>The same methodology was deployed for the 2024 plan update using new and updated data and enhanced with the identification of community lifeline facilities.</p>
<p>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.</p>	<p>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. In all cases, a damage function was applied to an asset inventory. The asset inventory was the same for all hazards and was generated in HAZUS-MH.</p>	<p>The same methodology was deployed for the 2024 plan update using new and updated data.</p>
<p>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.</p>	<p>There is a summary of anticipated development in the County profile, as well as in each individual annex.</p>	<p>The same methodology was deployed for the 2024 plan update using new and updated data.</p>
<p>§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.]</p>	<p>Each planning partner identified actions that could be implemented within its capabilities. The actions were jurisdiction-specific and strove to meet multiple objectives. Each planning partner completed an assessment of its planning, regulatory, technical, and financial capabilities.</p>	<p>Each planning partner used the progress reporting from the plan maintenance and evaluated the status of actions identified in the 2018 plan. Actions that were completed or no longer considered to be feasible were removed. Remaining actions was carried over to the 2024 plan, and in some cases, new actions were added to the action plan.</p>
<p>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.</p>	<p>The 2018 plan contained a mission statement, goals, objectives, and actions. The mission statement, goals and objectives were regional and covered all planning partners. They were targeted specifically for this HMP. These planning components supported the actions identified in the plan.</p>	<p>The Steering Committee reviewed and updated the mission statement, goals, and objectives for the plan to include a focus on increased resiliency. This resulted in the finalization of seven goals and 11 objectives to frame the plan.</p>

44 CFR Requirement	2018 Plan	2024 Updated Plan
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 hazard, with particular emphasis on new and existing buildings and infrastructure.	The 2018 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 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.	The mitigation catalog was reviewed and updated by the Steering Committee for the 2024 update. As with the 2018 plan, the catalog has been included in the 2024 plan to represent the comprehensive range of alternatives considered by each planning partner. The table with the analysis of mitigation actions was used in jurisdictional annexes to the plan.
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.	All municipal planning partners that participate in the NFIP identified an action stating their commitment to maintain compliance and good standing under the program.	Ongoing participation in the NFIP for municipalities was included in ongoing capabilities.
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.	Each recommended action was prioritized using a qualitative methodology based on the objectives the project will meet, the timeline for completion, how the project will be funded, the impact of the project, the benefits of the project, and the costs of the project.	A revised methodology based on the STAPLEE criteria (social, technical, administrative, political, legal, economic, and environmental) and using new and updated data was used for the 2024 plan update.
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.	The 2018 plan details steps for monitoring, evaluating, and updating the mitigation plan set forth in 44 CFR § 201.6.	The 2024 plan details a plan maintenance strategy similar to that of the initial plan.
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.	The 2018 plan details recommendations for incorporating the plan into other planning mechanisms.	The 2024 plan details recommendations for incorporating the plan into other planning mechanisms such as the following: <ul style="list-style-type: none"> • Comprehensive Plan • Emergency Response Plan • Capital Improvement Programs • Municipal Code
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.	The 2018 plan details a strategy for continuing public involvement.	The 2018 plan maintenance strategy was carried over to the 2024 plan. In addition, the County will use a proprietary online tool to support the annual progress reporting of mitigation actions.
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).	All planning partners participated in the planning process.	The 2024 plan achieves DMA 2000 compliance for 24 planning partners. Resolutions for each partner adopting the plan can be found in Appendix A of this volume.