

ROCKLAND COUNTY, NEW YORK

**MULTI-
JURISDICTIONAL
HAZARD MITIGATION
PLAN**



**Volume 2
OCTOBER 2024**

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SECTION 8. PLANNING PARTNERSHIP

This section describes the Rockland County’s Hazard Mitigation Plan (HMP) Planning Partnership, its responsibilities throughout the planning process, and the jurisdictional annexes developed as a result of the plan update efforts.

8.1 BACKGROUND

The Federal Emergency Management Agency (FEMA) encourages multi-jurisdictional planning for hazard mitigation. All participating jurisdictions must meet the requirements of Chapter 44 of the Code of Federal Regulations (44 CFR):

“Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process and has officially adopted the plan” [Section 201.6a(4)]

For the Rockland County HMP, a Planning Partnership was formed to leverage resources and to meet requirements for the federal Disaster Mitigation Action of 2000 (DMA) for as many eligible governments as possible. Members of the Planning Partnership consisted of representatives from each jurisdiction. The DMA defines a local government as follows:

Any county, municipality, city, town, township, public authority, school district, special district, intrastate district, council of governments (regardless of whether the council of governments is incorporated as a nonprofit corporation under State law), regional or interstate government entity, or agency or instrumentality of a local government; any Indian tribe or authorized tribal organization, or Alaska Native village or organization; and any rural community, unincorporated town or village, or other public entity.

Members of the Planning Partnership have the expertise to develop the plan and have their jurisdiction’s authority to implement the mitigation strategy developed during the planning process. The Planning Partnership is responsible for developing and reviewing draft sections of the plan, creating the mitigation strategy for their jurisdiction, and adopting the final plan.

Each participating planning partner has prepared a jurisdictional annex to this plan. These annexes, as well as information on the process by which they were created, are contained in this volume.

8.2 INITIAL SOLICITATION AND LETTERS OF INTENT

Rockland County solicited the participation of all municipalities in the County at the commencement of this project. All municipalities interested signed a Letter of Intent and/or a resolution committing their participation and resources to the development of the Rockland County HMP (Appendix B). Table 8-1 lists the jurisdictions that elected to participate in the update process and have met the minimum requirements of participation as established by the County and the Steering Committee. Rockland County and the municipalities indicated in Table 8-1 participated in the HMP update.

Table 8-1. Participating Jurisdictions in Rockland County

Jurisdictions		
Rockland County	Village of Kaser	Town of Ramapo
Village of Airmont	Village of Montebello	Village of Sloatsburg

Jurisdictions		
Village of Chestnut Ridge	Village of New Hempstead	Village of Spring Valley
Town of Clarkstown	Village of New Square	Town of Stony Point
Village of Grand View-on-Hudson	Village of Nyack	Village of Suffern
Town of Haverstraw	Town of Orangetown	Village of Upper Nyack
Village of Haverstraw	Village of Piermont	Village of Wesley Hills
Village of Hillburn	Village of Pomona	Village of West Haverstraw

8.2.1 Planning Partner Expectations

The following list of planning partner expectations were agreed to in each Letter of Intent to Participate (see Appendix C [Meeting Documentation] for details):

- Identify municipal representatives to serve as the planning point of contacts (POC). These people were responsible for representing the community and assuring that these participation expectations are met by their community.
- Support the Steering Committee selected to oversee the development of this plan.
- Provide representation at municipal Planning Committee meetings
- Provide data and information about the community as requested by the Steering Committee or the contract consultant, including:
 - Structure and facility inventory data
 - Identification of new development and anticipated development
 - Identification of natural hazard risk areas
 - Identification of natural hazard events and losses that have impacted the community in the last five years
 - Identification of plans, studies, reports, and ordinances addressing natural hazard risk
 - Identify mitigation activity in the community in the last five years, including progress on previously identified mitigation actions.
- Support public outreach efforts in the community which may include:
 - Providing notices of the planning project on the municipal website with links to a County project website
 - Providing notice of the planning project, the availability of Plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
 - Advertising and supporting public meetings in the area
 - Supporting outreach to National Flood Insurance Program (NFIP) Repetitive Loss and Severe Repetitive Loss property owners in the community.
- Assist with the identification of stakeholders within the community that should be informed and potentially involved with the planning process.
- Completing data and information collection survey forms in a timely manner.
- Identify specific mitigation actions to address each of the natural hazards posing significant [or high or medium] risk to the community.
- Involve the local NFIP Floodplain Administrator in the planning process.
- Review draft Plan sections when requested and provide comment and input as appropriate.
- Adopt the Plan by resolution of the local governing body after FEMA conditional approval.

- Periodically provide the Steering Committee with reports of municipal staff and volunteer labor spent on the planning process.

By adopting this plan, each planning partner also agrees to the plan implementation and maintenance protocol established in Volume I. As described in Volume I, Section 7 (Plan Maintenance), it is intended that the Planning Partnership remain active beyond the regulatory update to support plan maintenance. Regarding the composition of the Steering Committee and Planning Partnership, it is recognized that individual commitments change over time, and it shall be the responsibility of each jurisdiction and its representatives to inform the HMP Coordinator of any changes in representation.

8.2.2 Jurisdictional Annex Preparation Process

As stated in the 2022 New York State Hazard Mitigation Planning Standards, jurisdictional annexes provide a unique, stand-alone guide to mitigation planning for each jurisdiction. The Rockland County HMP Update is organized so that there is an annex for Rockland County and for every jurisdiction within the County's borders. Section 9 (Jurisdictional Annexes) includes an annex for each jurisdiction in Rockland County, including those that did not fully participate.

Annex Development

In order to facilitate update of the County and Jurisdictional Annexes, data from the 2018 Rockland County HMP annexes was transferred to the new annex format, which was developed to meet federal and state criteria. Clear instructions were provided to the County and municipalities. These instructions provided a basis to address the following:

- Document changes in capabilities and vulnerabilities.
- Provide a current status of the 2018 HMP mitigation strategy.
- Develop a new mitigation strategy to address identified issues and to increase community resiliency.

The County invited all municipalities to participate in a municipal kick-off meeting held on October 4, 2023, to provide an overview of the planning process. Key elements of the worksheets were discussed and subsequently completed by the appropriate jurisdictional personnel for each worksheet. The worksheets were collected, and the information was incorporated into each jurisdictional annex. In the event additional information was needed, the jurisdictional point of contact was contacted to provide more input into their annex.

Hazard Ranking Exercise

The presentation of the risk assessment and risk ranking for each jurisdiction was done on December 13, 2023. At this meeting, the consultant presented the overall risk assessment for the hazards of concern. In addition, each planning partner was asked to review the ranked risk specific for its jurisdiction. Refer to Section 5.3 (Hazard Ranking) for the methodology of the hazard ranking process. The calculated ranking was presented to each jurisdiction, and they were asked to review the ranking and revise based on history of events, probability of occurrence, and the potential impact on people, property, and the economy. The objectives of this exercise were to familiarize the partnership with how to use the risk assessment as a tool to support other planning and hazard mitigation processes and to help prioritize types of mitigation actions that should be considered. Hazards that were ranked as "high" for each jurisdiction as a result of this exercise were considered to be priorities for

identifying appropriate mitigation actions, although jurisdictions also identified actions to mitigate “medium” or “low” ranked hazards as appropriate.

Mitigation Strategy Workshop

A mitigation strategy workshop was held on December 13, 2023, for all participating jurisdictions to support the development of focused problem statements based on the impacts of natural hazards in the County and its communities. These problem statements are intended to provide a detailed description of the problem area, including its impacts to the municipality/jurisdiction, past damages, loss of service, etc. An effort was made to include the street address of the property/project location, adjacent streets, water bodies, and well-known structures as well as a brief description of existing conditions (topography, terrain, hydrology) of the site. These problem statements form a bridge between the hazard risk assessment, which quantifies impacts to each community with the development of actionable mitigation strategies. The nearly 100 percent participation of the planning partners reflects the excellent outreach and dedication of the planning team. The County and the mitigation consultant team worked with each jurisdiction to identify clear, implementable mitigation actions as well as to further support the completion of the jurisdictional annexes.

Jurisdictional Annexes

While the jurisdictional annex format is designed to document and ensure local compliance with the DMA 2000 regulations, its greater purpose and function includes:

- Providing a locally relevant synthesis of the overall mitigation plan that can be readily presented, distributed, and maintained;
- Facilitating local understanding of the community’s risk to natural hazards;
- Facilitating local understanding of the community’s capabilities to manage natural hazard risk, including opportunities to improve those capabilities;
- Facilitating local understanding of the efforts the community has taken, and plans to take, to reduce their natural hazard risk;
- Facilitating the implementation of mitigation strategies, including the development of grant applications;
- Providing a framework by which the community can continue to capture relevant data and information for future plan updates.

Each jurisdiction’s annex is intended to be a *living document* and will continue to be improved as resources permit. As such, its design is intended to promote and accommodate continued efforts to maintain the annex to be current and to improve the effectiveness of the annex as the key tool, reference, and guiding document by which the jurisdiction will implement hazard mitigation locally. The following provides a description of the various elements of the jurisdictional annex.

Section 9.X.1: Hazard Mitigation Planning Team: Identifies the hazard mitigation planning primary and alternate(s) contacts and Floodplain Administrators as identified by the jurisdiction. Provides details on which departments were involved throughout the development of the jurisdictional annex. Plans developed with the participation of the widest range of departments, stakeholders, and persons familiar with the jurisdiction should

be involved in the development of the jurisdictional annexes. Further detail is provided in Section 3 (Planning Process) and Appendix B (Participation Matrix).

Section 9.X.2: Municipal Profile: Provides an overview and profile of the jurisdiction, including population and socially vulnerable populations.

Section 9.X.3: Jurisdictional Capability Assessment and Integration: Provides an inventory and evaluation of the jurisdiction's tools, mechanisms, and resources available to support hazard mitigation and natural hazard risk reduction. Within the municipal annexes, tables provide an inventory of the municipality's planning, regulatory, administrative, technical, and fiscal capabilities. Further, another table identifies the municipality's level of participation in state and federal programs designed to promote and incentivize local risk reduction efforts.

Section 9.X.4: National Flood Insurance Program (NFIP) Compliance: Summarizes jurisdiction-specific information related to managing and regulating the regulatory floodplain, including current and future compliance with the NFIP.

Section 9.X.5: Evacuation, Sheltering, Temporary Housing, and Permanent Housing: To meet the NYS DHSES requirement, jurisdictions provided evacuation routes, sheltering measures, and potential locations for temporary and permanent housing.

Section 9.X.6: Growth/Development Trends: Summarizes recent and expected future development trends, including major residential/commercial development and major infrastructure development.

Section 9.X.7: Jurisdictional Risk Assessment: Provides information regarding each plan participant's vulnerability to the identified hazards. Full data and information on the hazards of concern, the methodology used to develop the vulnerability assessments, and the results of those assessments that serve as the basis of these local risk rankings may be found in Section 5.

- **Hazard Area Extent and Location Map:** Each annex includes a map (or series of maps) illustrating identified hazard zones and critical facilities. Further, these maps show areas of known or anticipated future development, as available and provided by the jurisdiction.
- **Hazard Event History:** Identifies hazard events that have caused significant impacts within the jurisdiction, including a summary characterization of those impacts identified by the jurisdiction.
- **Hazard Ranking and Vulnerabilities:** The Rockland County HMP identifies and characterizes the broad range of hazards that pose risk to the entire planning area; however, each jurisdiction has differing degrees of risk exposure and vulnerability aside from the whole. The local risk ranking serves to identify each jurisdiction's degree of risk to each hazard as it pertains to them, supporting the appropriate selection and prioritization of initiatives that will reduce the highest levels of risk for each community.
- **Critical Facilities:** Identifies potential flood losses to critical facilities in the jurisdiction based on the flood vulnerability assessment process presented in Section 5.
- **Identified Issues:** Presents other specific hazard vulnerabilities as identified by the jurisdiction.

Section 9.X.8: Mitigation Strategy and Prioritization: Discusses and provides the status of past mitigation actions and status and describes proposed hazard mitigation initiatives and prioritization.

- **Past Mitigation Initiative Status:** Where applicable, a review of progress on the jurisdiction’s prior mitigation strategy is presented, identifying the disposition of each prior action, project, or initiative in the jurisdiction’s updated mitigation strategy. Other completed or ongoing mitigation activities that were not specifically part of a prior local mitigation strategy may be included in this subsection as well.
- **Completed Mitigation Initiatives Not Identified in the Previous Mitigation Strategy:** Other completed or ongoing mitigation activities that were not specifically part of a prior local mitigation strategy may be included in this subsection as well.
- **Proposed Hazard Mitigation Initiatives for the Plan Update:** Table 9.X-20 presents the jurisdiction’s updated mitigation strategy. As indicated, applicable mitigation actions, projects, and initiatives are further documented on an Action Worksheet, which provides details on the project identification, evaluation, prioritization, and implementation process. Table 9.X-21 provides a summary of the local mitigation strategy prioritization process discussed in Section 6.

Workshops and additional meetings (in person, by email, or by teleconference) to complete the jurisdictional annexes were held with the Steering and Planning Committees throughout the planning process. In summary, all participating communities and the county completed the planning partner expectations and annex preparation process. Details regarding these meetings are described further in Sections 3 (Planning Process) and 6 (Mitigation Strategy). Completed jurisdictional annexes are provided in Section 9 (Jurisdictional Annexes).

8.2.3 Coverage Under the Plan

Of the 24 planning partners, all fully met the participation requirements specified by the Steering Committee. All planning partners are included in this volume. Those that did not meet the requirements will not be able to seek FEMA or NYS DHSES approval at the time of plan submittal nor will they be eligible to obtain FEMA grant funding.

Table 8-2 lists the status of each jurisdiction as well as their status in this plan update. It is noted that participation in scheduled Planning Partnership meetings provides only a partial indication of the level of participation of each jurisdiction. The consultant provided support in the manner of numerous calls as well as virtual and in person meetings to ensure each planning partner seeking approval for the HMP met the threshold for participation. Appendix B (Participation Matrix) and Appendix C (Meeting Documentation) provide details on participation and meeting attendance.

Table 8-2. Municipal Participation Summary

Municipality	Letter of Intent to Participate	Attended Workshops and/or Meetings and Project Calls	Provided Update on Past Projects	Submitted Mitigation Actions for Current Plan	Seeking Approval for Adoption (meets all previous requirements)
Rockland County	-	X	X	X	X
Village of Airmont	X	X	X	X	X
Village of Chestnut Ridge	-	X	X	X	X
Town of Clarkstown	X	X	X	X	X
Village of Grand View-on-Hudson	X	X	X	X	X
Town of Haverstraw	X	X	X	X	X

Municipality	Letter of Intent to Participate	Attended Workshops and/or Meetings and Project Calls	Provided Update on Past Projects	Submitted Mitigation Actions for Current Plan	Seeking Approval for Adoption (meets all previous requirements)
Village of Haverstraw	-	X	X	X	X
Village of Hillburn	-	X	X	X	X
Village of Kaser	X	X	X	X	X
Village of Montebello	X	X	X	X	X
Village of New Hempstead	X	X	X	X	X
Village of New Square	-	X	X	X	X
Village of Nyack	X	X	X	X	X
Town of Orangetown	X	X	X	X	X
Village of Piermont	X	X	X	X	X
Village of Pomona	-	X	X	X	X
Town of Ramapo	X	X	X	X	X
Village of Sloatsburg	X	X	X	X	X
Village of Spring Valley	X	X	X	X	X
Town of Stony Point	X	X	X	X	X
Village of Suffern	X	X	X	X	X
Village of Upper Nyack	X	X	X	X	X
Village of Wesley Hills	X	X	X	X	X
Village of West Haverstraw	-	X	X	X	X

SECTION 9. JURISDICTIONAL ANNEX

9.1 ROCKLAND COUNTY

This jurisdictional annex to the Rockland County Hazard Mitigation Plan (HMP) provides information to assist public and private sectors in the County with reducing losses from future hazard events. This annex is not guidance of what to do when a disaster occurs; it focuses on actions that can be implemented prior to a disaster to reduce or eliminate damage to property and people. The annex presents a general overview of the County, describes who participated in the planning process, assesses the County’s risk, vulnerability, and capabilities, and outlines a strategy for achieving a more resilient community.

9.1.1 Hazard Mitigation Planning Team

Rockland County identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many County departments. The County Office of Fire and Emergency Services (OFES) represented the community on the Rockland County HMP Planning Partnership and Steering Committee and supported the local planning process by securing input from persons with specific knowledge to enhance the plan. All departments were asked to contribute to the annex development through reviewing and contributing to the capability assessment, reporting on the status of previously identified actions, and participating in action identification and prioritization.

Table 9.1-1 summarizes County officials who participated in the development of the annex and in what capacity. Additional documentation of the County’s planning activities through Planning Partnership meetings is included in Volume 1.

Table 9.1-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Chris Jensen, Program Coordinator, Rockland County OFES Address: 35 Firemen’s Memorial Drive Phone Number: (845) 364-8902 Email: jensenc@co.rockland.ny.us	Name/Title: Allie Manigo, Data Entry Operator, Rockland County OFES Address: 35 Firemen’s Memorial Drive Phone Number: (845) 364-8824 Email: manigoa@co.rockland.ny.us
Additional Contributors	
Name/Title: Vince Alteri, Executive Director, Rockland County Drainage Agency Method of Participation: Served on the Steering Committee and Planning Partnership, provided feedback on capability assessment and mitigation strategy, attended meetings, and reviewed documents	
Name/Title: Mike DiMola, Parks Operations Manager, Rockland County Division of Environmental Resources Method of Participation: Served on the Steering Committee and Planning Partnership, provided feedback on capability assessment and mitigation strategy, attended meetings, and reviewed documents	
Name/Title: Al Carnevale, Deputy Superintendent, Rockland County Highway Department Method of Participation: Served on the Steering Committee and Planning Partnership, provided feedback on capability assessment and mitigation strategy, attended meetings, and reviewed documents	
Name/Title: Jake Palant, Associate Planner, Rockland County Department of Planning Method of Participation: Served on the Steering Committee and Planning Partnership, provided feedback on capability assessment and mitigation strategy, attended meetings, and reviewed documents	

Primary Point of Contact	Alternate Point of Contact
Name/Title: Scott Lounsbury, GIS Planning Coordinator Method of Participating: Served on the Steering Committee and Planning Partnership, provided feedback on capability assessment and mitigation strategy, attended meetings, and reviewed documents	

9.1.2 County Profile

Please refer to Section 3 of this HMP for details on Rockland County’s population, location, climate, history, growth, and development.

9.1.3 Jurisdictional Capability Assessment and Integration

Rockland County performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Volume I describes the components included in the capability assessment and their significance for hazard mitigation planning. The jurisdictional assessment for this annex includes analyses of the following capabilities and programs:

- Planning and regulatory capabilities
- Development and permitting capabilities
- Administrative and technical capabilities
- Fiscal capabilities
- Education and outreach capabilities
- Classification under various community mitigation programs
- Adaptive capacity to withstand hazard events

For a community to successfully reduce long-term risk, hazard mitigation must be integrated into day-to-day local government operations. As part of the hazard mitigation analysis, planning and policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress toward plan integration. Development of an updated mitigation strategy provided an opportunity for Rockland County to identify opportunities for integration of mitigation concepts that can be incorporated into municipal procedures.

Planning, Legal, and Regulatory Capability and Integration

Table 9.1-2 summarizes the regulatory tools that are available to Rockland County.

Table 9.1-2. Planning, Legal, and Regulatory Capability and Integration

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
<i>Codes, Ordinances, & Regulations</i>				
Building Code	Yes	Chapter 220 Building Construction, Rockland County Code	State, County	Rockland County Buildings & Codes Department
<p><i>How has or will this be integrated with the HMP and how does this reduce risk?</i></p> <p>This chapter ensures that homes, buildings, and businesses are structurally sound and compliant with New York State Uniform and Energy Code. The chapter focuses on new construction techniques that presents different and significant challenges and potential danger to firefighters and firemanic personnel in fighting fires in such structures should they catch fire. That danger includes faster burning and faster and unexpected ceiling and roof collapses.</p>				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Zoning/Land Use Code	Yes	New York General Municipal Law (GML), Article 12-B, §239	County	Rockland County Planning Department, Land Use Division
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The GML requires that certain types of municipal planning, zoning and subdivision projects be referred to County Planning for review prior to local action being taken. The requirement seeks to promote coordination of land use decision-making and to enhance consideration of potential inter-municipal and county-wide impacts. This requirement is outlined in Article 12-B of the GML, §239 l, m, and n. This process is commonly referred to across New York State as the "GML 239 referral", the "GML 239 review", or simply the "239 review" process. The responsibility for all Section 239 reviews has been given to the Rockland County Commissioner of Planning, pursuant to Article X, Section 5-82 of the Rockland County Charter. This provision applies to development that is within 500 feet from County or State-owned rights-of-way, parks, or facilities and institutions; County rivers and streams; and intermunicipal boundaries. The County Planning Department regularly incorporates comments into its GML reviews pertaining to flood mitigation and other potential hazards.				
In May 2017, Rockland County signed an Executive Order that will prohibit County departments from issuing permits for developments that have not complied with GML. GML requires towns and villages comply with the findings of the County Planning Commissioner or file a reason why a decision has not been made to comply. Failure to do so will result in the County not issuing permits for such uses as water and sewer connections, well permits, rooming house permits, drainage permits, road opening permits, issuance of new addresses and others.				
Subdivision Code	Yes	New York General Municipal Law (GML), Article 12-B, §239	County	Rockland County Planning Department, Land Use Division
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The GML §239 n requires that subdivision applications within a certain distance from County interests are referred to County Planning for review to promote coordination of land use decisions and local/county impacts.				
Site Plan Code	Yes	New York General Municipal Law (GML), Article 12-B, §239	County	Rockland County Planning Department, Land Use Division
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The GML §239 m and l requires that site plan applications within a certain distance from County interests are referred to County Planning for review to promote coordination of land use decisions and local/county impacts.				
Stormwater Management Code	Yes	Chapter 345, Sewers	County, Local	Rockland County Division of Environment
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
This chapter establishes rules and regulations governing the discharge of sewage, industrial wastes and other waste into the Rockland County Sewer District No. 1 and public sewers tributary. The chapter's stated purposes include provisions to prohibit excess volumes and/or rates of flow and to prevent public nuisance.				
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
Real Estate Disclosure Requirements	Yes	New York State (NYS) mandate, Property Condition Disclosure Act, NY Code – Article 14 §460-467	State, County	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The NYS mandate requires sellers to disclose to potential buyers whether their property is in a designated floodplain.				
Growth Management	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Environmental Protection Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Flood Damage Prevention Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Wellhead Protection	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Emergency Management Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Climate Change Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Planning Documents				
General/Comprehensive Plan	Yes	Rockland Tomorrow: Rockland County Comprehensive Plan (2011)	County	Rockland County Planning Department
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The County created a comprehensive plan that will serve as the basis for all County government planning and development issues for the next 10 to 20 years and provide guidance for future planning and zoning actions by towns and villages. The plan also creates a framework for future capital expenditure decisions by the County government. The Comprehensive Plan includes several references to the 2010 County Hazard Mitigation Plan. This includes the total area of the County that is located within flood risk zones, total dollar amount of flood losses, and discussion of the hazard mitigation initiative (Office of Fire and Emergency Services). In 2024, the Rockland County Planning Department has started the process of updating its Comprehensive Plan and will incorporate elements of the updated HMP.				
Capital Improvement Plan	Yes	Capital Improvement Program 2022-2027, Adopted 2022	County	Rockland County Planning Department, Rockland County Capital Projects Committee
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Capital Improvement Program considers the necessity, priority, feasibility, location, cost, and method of financing of all existing and proposed capital projects. The current budget identifies several capital projects that can reduce the County's risk to hazards, including emergency generators and electrical improvements to County center buildings and numerous drainage projects.				
Disaster Debris Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Floodplain Management or Watershed Plan	Yes	Resilient NY Flood Mitigation Studies: Hackensack River, Mahwah River, Minisceongo Creek, Ramapo River, Saddle River, Sparkill Creek (2018)	State	NYS Department of Environmental Conservation
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> This plan was developed with support from the Resilient NY program. The studies evaluate watershed-level resiliency to extreme weather events that result in flooding and ice jam formations. Each study conducts an analysis on high-risk areas, identifies mitigation recommendations and actions, and conducts a zoning and land use assessment for each municipality.				
Stormwater Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Open Space Plan	Yes	Resolution No. 406 of 2019	County	Open Space Acquisition Program
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> After a 10-year moratorium on Open Space acquisitions, County Executive Ed Day, announced that the County will once again be acquiring Open Space properties starting in January 2020. The County has committed up to \$30,000,000 to fund this program.				
Urban Water Management Plan	Yes	Rockland County Comprehensive Water Conservation and Implementation Plan (2020)	County	Rockland County Department of Planning
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Plan provides a comprehensive water policy to ensure a safe, cost-effective, long-term water supply for the County that incorporates sustainability, demand-side principles, and conservation. The Plan evaluates existing and future conditions and recommends water conservation measures that can inform the HMP's County and Municipal Profiles and Risk Assessments.				
Habitat Conservation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Economic Development Plan	Yes	Chapter 252, Empire Zones	County	Rockland County Department of Planning
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
Section 961 of Article 18-B of the GML authorizes the County to prepare and submit the County's application for designation as an Empire Zone, including the proposed boundaries thereto, to the New York State Commissioner of Economic Development.				
Community Wildfire Protection Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Community Forest Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Transportation Plan	Yes	Regional Transportation Plan – Moving Forward	Regional	New York Metropolitan Transportation Council
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
Rockland County is an active member of the New York Metropolitan Transportation Council (NYMTC), the area's Metropolitan Planning Organization (MPO) responsible for coordinating and administering federal funding for eligible transportation planning and construction projects. NYMTC's work program is developed annually. It defines the priorities in the planning area and describes all transportation-related activities anticipated within a given program year. The work program also indicates which of these planning activities will receive federal funding. Its successful completion each year enables federal funding assistance to undertake planning activities by NYMTC's staff and its members.				
Agriculture Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Climate Action/ Resiliency/Sustainability Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The County intends to create a County Operations Climate Action Plan in the near future, which will incorporate elements of the HMP.				
Tourism Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Business/ Downtown Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Other (for example NYRCR, etc.)	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Response/Recovery Planning				
Emergency Operations Plan	Yes	Rockland County Comprehensive Emergency Management Plan	County	Rockland County OFES
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The OFES maintains the Rockland County Comprehensive Emergency Management Plan (CEMP) that is reviewed bi-annually. The County CEMP contains Hurricane/Coastal Storm and Winter Storm annexes. Four of the five Towns have CEMPs (updated within the year); 6 of the 19 Villages have CEMPs and some Villages defer to the Town's plan. Specific evacuation plans are identified in the Rockland County CEMP Hurricane/Coastal Storm Annex and Dam Safety Plans (Emergency Action Plans), as well within plans to evacuate portions of the County in the event of a radiological release at the Indian Point Nuclear Power Plant in Buchanan (Westchester County).				
Continuity of Operations Plan	Yes	Rockland County Continuity of Operations Plan	County	Rockland County OFES
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
This plan puts forth a strategy to ensure the County Government and its departments can continue operations of essential functions under a broad range of conditions, particularly hazard conditions.				
Substantial Damage Response Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Threat and Hazard Identification and Risk Assessment	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Post-Disaster Recovery Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Public Health Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

Development and Permitting Capability

Table 9.1-3 summarizes the capabilities of Rockland County to oversee and track development.

Table 9.1-3. Development and Permitting Capability

Indicate if your jurisdiction implements the following	Yes/No	Comment:
Do you issue development permits?	Yes	<p>A majority of permitting in Rockland County is performed at the local level; however, the County does require permits for various activities. The Highway Department requires permits for the following activities:</p> <ul style="list-style-type: none"> • Installing any utilities or other excavations on a county right-of-way. • Construction of or additions to residential structures with frontage on county highway even if there is no direct access to a county highway. • Constructing an approach or access connection, such as a driveway, street, or temporary entrance, to the county road system. • Construction on property adjacent to a county road right-of-way, such as excavating for new structures, drainage, roof drain connection, landscaping projects, fences, driveway repairs, curbing, sidewalks, and connections to catch basins. • Moving overweight and oversized loads over county roads, subdivisions, or other street connections. • Special activities impacting county roadways, such as road closings, parades, banners, etc. • Any other proposed work, not outlined above, to take place within or adjacent to the county right-of-way. <p>The Rockland County Department of Health is mandated under Part 5 of the New York State Sanitary Code, 10 NYCRR § 5 - Drinking Water Supplies, to provide technical assistance to residents regarding their drinking water wells, and to require that new water supply wells are constructed pursuant to the requirements contained within Appendix 5-B of that regulation. The Department’s permitting program ensures that water supply wells, as well as resource evaluation and geothermal wells, are properly constructed, and that unused or poorly maintained wells are properly decommissioned, in accordance with state and local requirements.</p>
If you issue development permits, what department is responsible?	Yes	Rockland County Highway Department; Rockland County Department of Health

Indicate if your jurisdiction implements the following	Yes/No	Comment:
If you do not issue development permits, what is your process for tracking new development?	N/A	-
Are permits tracked by hazard area? (For example, floodplain development permits.)	Yes	Permits require the identification of floodplains and bodies of water
Do you have a buildable land inventory?	Yes	Rockland County is preparing a build-out analysis (as of February 2024) to understand buildable land throughout the County. The Rockland County GIS Division maintains a GIS portal that has data and maps with tax parcels, municipal boundaries, roads, public transportation, historic resources, economic data, land use data, planimetric data, environmental data, and topography.
If you have a buildable land inventory, please describe	N/A	-
Describe the level of build-out in your jurisdiction.	N/A	-

Administrative and Technical Capability

Table 9.1-4 summarizes potential staff and personnel resources available to Rockland County and their current responsibilities that contribute to hazard mitigation.

Table 9.1-4. Administrative and Technical Capabilities

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
<i>Administrative Capability</i>		
Planning Board	Yes	The Rockland County Planning Board is comprised of nine county residents, made up of engineers, attorneys, contractors, and retirees, etc. The Planning Board members serve in an advisory capacity to the Commissioner of Planning about the reviews undertaken by the Department of Planning as required under GML. The Rockland County Planning Board advises the Commissioner of Planning, the County Executive and the County Legislature in matters relating to planning and shall have and exercise such other and related duties required by them. In addition, the Board advises the Planning Commissioner in matters related to comprehensive metropolitan, regional, county, and municipal planning.
Zoning Board of Adjustment	No	-
Planning Department	Yes	Rockland County Planning Department performs a variety of tasks, focusing on topics related to housing, environmental and natural issues, historic and cultural resources, recreation and open space, and infrastructure. The staff also study the environmental impacts of proposed projects under the State Environmental Quality Review Act. The County Planning Department issues GML 239 Reviews to its municipalities for site plans, variances, special permits, and other proposals as required by State law.
Mitigation Planning Committee	Yes	Rockland County Local Emergency Planning Committee’s primary duty is to develop and maintain an Emergency Response Plan that establishes procedures for receiving and processing public requests for information concerning chemicals and chemical spills within the county. The Committee reviews the plan annually.

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
Environmental Board/Commission	Yes	The Rockland County Environmental Management Council (EMC) was established by the Legislature in 1973. The EMC is comprised of a volunteer board representing the five towns (13-member board with at-large members, but at the time of this plan’s development, the County proposed to change the board to nine members).
Open Space Board/Committee	Yes	The Rockland County Park Commission is advisory and serves as a liaison between the community and the Rockland County Executive and Legislature. The Commission's primary goal is two-fold: to protect the natural resources and landscape of Rockland County through preservation of open space dedicated as County parkland and to help develop policies for the operation and utilization of the Rockland County Parks System.
Economic Development Commission/Committee	Yes	The Rockland County Department of Economic Development & Tourism promotes economic stability and growth by supporting a healthy business environment and empowering companies to grow and succeed. The Department provide services directly to businesses through advocacy, retention and expansion assistance, and workforce development, and practice economic development through the implementation of various programs including grant assistance; business attraction, retention & expansion assistance; resource & incentive coordinators; and workforce development.
Public Works/Highway Department	Yes	The Rockland County Highway Department has the responsibility for the administration, construction, maintenance, supervision, repair, and care of approximately 340 lane miles (167 centerline miles) of roadways, 83 bridges and 115 culverts within the county jurisdiction. The Department’s mission is to provide a safe, well maintained and efficient operation of the county highway and bridge system.
Construction/Building/Code Enforcement Department	Yes	<p>The Rockland County Office of Buildings and Codes ensures that homes, buildings, and businesses within the Village of Spring Valley are structurally sound and compliant with New York State Uniform and Energy Code. Responsibilities include:</p> <ul style="list-style-type: none"> • Issue and review all types of permits for the Village of Spring Valley including building permits, mobile home park permits, and junkyard permits. • Perform inspections for annual permits. • Issue certificates of occupancy. • Schedule building construction inspections. • Investigate reports regarding any issues of noncompliance with the Uniform or Energy Code. • Maintain records and collect fees for any operation that requires fee collection for permits. • Meet with individuals concerning any building code matters. • Administer procedural rules for court hearings.
Emergency Management/Public Safety Department	Yes	The Rockland County OFES responds to natural disasters such as snowstorms, floods, and hurricanes; technical disasters such as chemical spills; and hazardous materials incidents. The Office provides 911 service for the residents of Rockland County where they dispatch fire companies and ambulance squads. The Office also conducts Indian Point drills on a regular basis. The overall mission of the Office is to provide support and training necessary to the Rockland County Fire Service and all Emergency Responders so that they may provide our citizens with the finest available emergency services.

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	Yes	The Highway Department Maintenance & Construction Division performs the following activities: <ul style="list-style-type: none"> • Removing snow and ice from the county road system to achieve snow and ice-free roads (i.e., "black pavement" policy). • Maintaining and repairing pavement and shoulders on county roads including pothole repair, crack sealing, micro-paving, and hot and cold blacktop. • Maintaining and repairing county bridges and culverts. • Maintaining and/or constructing drainage systems and drainage structures on the county road system. • Maintaining guide railing, and replacing substandard and/or deteriorated guide railing, on the county road system. • Maintaining and installing traffic control and delineation devices (signs, line and zone striping, etc.) on the county road system. • Maintaining and repairing the Highway Department's fleet of vehicles and construction equipment. • Storing 4,700± tons of salt in the Town of Stony Point and Village of Pomona for snow and ice removal. • Removing trees from the county's right-of-way that are dead, dying, weakened, or impeding sight distances on a county road. • Maintaining and/or landscaping vegetated areas within the county's right-of-way.
Mutual aid agreements	Yes	The County has memorandums of understanding (MOU) with schools, bus companies, hospitals, and the American Red Cross.
Human Resources Manual	Yes	County-wide for all employees
Other	N/A	-
<i>Technical/Staffing Capability</i>		
Planners or engineers with knowledge of land development and land management practices	Yes	Rockland County Planning Department Land Use Division
Engineers or professionals trained in building or infrastructure construction practices	Yes	Rockland County Highway Department Engineering Division
Planners or engineers with an understanding of natural hazards	Yes	Rockland County Planning Department Land Use Division; OFES
Staff with expertise or training in benefit/cost analysis	Yes	Rockland County Finance and Budgeting Department
Professionals trained in conducting damage assessments	Yes	Rockland County Highway Department Engineering Division
Personnel skilled or trained in GIS and/or Hazus applications	Yes	Rockland County Planning Department – GIS Division
Staff that work with socially vulnerable populations or underserved communities	Yes	The following county departments provide services to socially vulnerable and underserved communities: Health, Office of Aging, and Mental Health. The non-profit organization United Way of Rockland County also provides these services.
Environmental scientist familiar with natural hazards	Yes	County consults with contractors, academia, and engineers/
Surveyor(s)	Yes	Rockland County Highway Department’s Engineering Division
Emergency Manager	Yes	Rockland County OFES
Grant writer(s)	Yes	Contracted out – Millenium
Resilience Officer	No	The County Planning Department will be hiring a Sustainability Coordinator in 2024.

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
Other	No	-

Fiscal Capability

Table 9.1-5 summarizes financial resources available to Rockland County.

Table 9.1-5. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use? (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	Yes
Capital improvements project funding	Yes – Rockland County Capital Project Budget
Authority to levy taxes for specific purposes	Yes
User fees for water, sewer, gas, or electric service	No
Impact fees for homebuyers or developers of new development/homes	No
Stormwater utility fee	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	Yes
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	No
Other federal or state Funding Programs	Yes
Open Space Acquisition funding programs	No
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	Economic Development Loan Program; NY Rising community Reconstruction Program; U.S. Department of Housing and Urban Development (HUD) HOME Investments Partnerships and Emergency Solutions Grant; Department of Homeland Security grants

Education and Outreach Capability

Table 9.1-6 summarizes the education and outreach resources available to Rockland County.

Table 9.1-6. Education and Outreach Capabilities

Outreach Resources	Available? (Yes/No)	Comment:
Public information officer or communications office	Yes	County Executive’s Office
Personnel skilled or trained in website development	Yes	County Information Technology
Hazard mitigation information available on your website	Yes	Information can be found under the Rockland County Fire and Emergency Services website
Social media for hazard mitigation education and outreach	Yes	County and local websites; social media accounts
Citizen boards or commissions that address issues related to hazard mitigation	Yes	Local Emergency Planning Committee (LEPC)
Warning systems for hazard events	Yes	Mass notification systems (NYAlert, CodeRED, RAVE), cell phone notifications, interoperable radio systems, access, and functional needs registry
Natural disaster/safety programs in place for schools	Yes	Community Emergency Response Team (CERT) training in school districts

Outreach Resources	Available? (Yes/No)	Comment:
Organizations that conduct outreach to socially vulnerable populations and underserved populations	Yes	United Way of Rockland County, Rockland County Department of Health, Department of Mental Health, Office for People with Disabilities, and Office for the Aging
Public outreach mechanisms/programs to inform citizens on natural hazards, risk, and ways to protect themselves during such events	Yes	Through the County’s website, social media accounts, and mass notification systems

Community Classifications

Table 9.1-7 summarizes classifications for community programs available to Rockland County.

Table 9.1-7. Community Classifications

Program	Participating? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	No	-	-
New York State Department of Environmental Conservation (NYSDEC) Climate Smart Community	Yes	Registered	August 2, 2010
National Weather Service Storm Ready Certification	No	-	-
Firewise Communities classification	No	-	-
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable
 — = Unavailable

Adaptive Capacity

Adaptive capacity is defined as “the ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or respond to consequences” (IPCC, 2022). Each jurisdiction has a unique combination of capabilities to adjust to, protect from, and withstand a future hazard event, future conditions, and changing risk. Table 9.1-8 summarizes the adaptive capacity for each identified hazard of concern and the County’s capability to address related actions using the following classifications:

- Strong: Capacity exists and is in use.
- Moderate: Capacity might exist; but is not used or could use some improvement.
- Weak: Capacity does not exist or could use substantial improvement.

Table 9.1-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Disease Outbreak	Moderate
Drought	Moderate
Earthquake	Moderate
Extreme Temperature	Moderate
Flood	Moderate

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Landslide	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

9.1.4 National Flood Insurance Program Compliance

This section provides specific information on the management and regulation of the regulatory floodplain, including current and future compliance with the National Flood Insurance Program (NFIP). Floodplain administration is performed at the local level; however, Rockland County provides floodplain services where applicable.

NFIP Summary

Table 9.1-9 summarizes the NFIP policy and claim statistics for Rockland County.

Table 9.1-9. Rockland County NFIP Summary of Policy and Claim Statistics

# Policies	962
# Claims (Losses)	3,113
Total Loss Payments	\$43,849,675
# Repetitive Loss Properties (NFIP definition)	11
# Repetitive Loss Properties (FMA definition)	292
# Severe Repetitive Loss Properties	40
# Policies Within the 1% Annual Chance Flood Boundary	38

NFIP Definition of Repetitive Loss: The NFIP defines a repetitive loss property as any insurable building for which two or more claims of more than \$1,000 were paid by the NFIP within any rolling 10-year period since 1978.

FMA Definition of Repetitive Loss: FEMA’s Flood Mitigation Assistance (FMA) program defines a repetitive loss property as any insurable building that has incurred flood-related damage on two occasions, in which the cost of the repair, on average, equaled or exceeded 25 percent of the market value of the structure at the time of each such flood event.

Definition of Severe Repetitive Loss: A residential property covered under an NFIP flood insurance policy and: (a) That has at least four NFIP claim payments over \$5,000 each, and the cumulative amount of such claims payments exceeds \$20,000; or (b) For which at least two separate claims payments have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building. At least two of the claims must have occurred within any 10-year period, more than 10 days apart.

Source: FEMA, December 2023

Note: RL count may include properties also identified as SRL.

Flood Vulnerability Summary

Table 9.1-10 provides a summary of the NFIP program and floodplain administration, where appropriate, in Rockland County.

Table 9.1-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	Refer to each municipal annex (Sections 9.2 through 9.24) for flood-prone areas in the County.

NFIP Topic	Comments
Do you maintain a list of properties that have been damaged by flooding?	This is performed at the local level, where applicable.
Do you maintain a list of property owners interested in flood mitigation?	This is performed at the local level, where applicable.
How many homeowners and/or business owners are interested in mitigation (elevation or acquisition)?	N/A
Are any RiskMAP projects currently underway in your jurisdiction? <ul style="list-style-type: none"> If so, state what projects are underway. 	N/A
How do you make Substantial Damage determinations?	This is performed at the local level.
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	N/A
How many properties have been mitigated (elevation or acquisition) in your jurisdiction? <ul style="list-style-type: none"> If there are mitigation properties, how were the projects funded? 	Between 1999 and 2010, 31 individual properties were acquired preserving 1,204 acres of land. A total of \$23,300,000 in County funds were expended while \$11,576,000 in state grants and partnerships with Land Trusts and local municipalities were leveraged. The Open Space Acquisition Program has successfully provided access to the Hudson River (27 acres), preserved steep slopes (500 acres), protected wetlands (350 acres), and preserved a valuable historic resource (0.5 acres). The remaining acreage includes floodplains, scenic vistas, and properties to provide access to other parklands. These parcels are scattered throughout the five Towns in the County and offer a variety of recreational opportunities.
Do your flood hazard maps adequately address the flood risk within your jurisdiction? <ul style="list-style-type: none"> If not, state why. 	Yes, the maps adequately show flood risk in the County; however, stormwater flooding is a concern and the flood hazard maps do not reflect areas of stormwater flooding.
NFIP Compliance	
What local department is responsible for floodplain management?	The Rockland County Drainage Agency (RCDA) was established under authority of Chapter 846 of the Laws of 1975 to regulate construction and maintenance along designated County regulated streams. In conjunction with the New York State Department of Environmental Conservation (DEC), the Army Corps of Engineers (COE), and local municipalities, the RCDA regulates development and activity along 14 streams - approximately 78 miles - within the County. The Drainage Agency also performs inspections of County Regulated Streams to identify obstructions or damage.
Are any certified floodplain managers on staff in your jurisdiction?	Yes
Do you have access to resources to determine possible future flooding conditions from climate change?	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? <ul style="list-style-type: none"> If so, what type of assistance/training is needed? 	County staff receives support and training as needed.
Provide an explanation of NFIP administration services you provide (e.g., permit review, GIS, education/outreach, inspections, engineering capability)	The Rockland County Drainage Agency requires permits for construction activity on properties within 100 feet of the channel lines of any Official Regulated Stream. Additionally, prior to filing at the Rockland County Clerk's Office, all subdivision plats must be signed by the Chairman of the Drainage Agency.
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	The County does not issue building permits; therefore, they do not determine substantial improvements.

NFIP Topic	Comments
What are the barriers to running an effective NFIP program in the community, if any?	N/A
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? <ul style="list-style-type: none"> If so, state the violations. 	N/A
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	N/A
What is the local law number or municipal code of your flood damage prevention ordinance?	N/A
What is the date that your flood damage prevention ordinance was last amended?	N/A
Does your floodplain management program meet or exceed minimum requirements? <ul style="list-style-type: none"> If exceeds, in what ways? 	N/A
Are there other local ordinances, plans or programs (e.g., site plan review) that support floodplain management and meeting the NFIP requirements? For instance, does the planning board or zoning board consider efforts to reduce flood risk when reviewing variances such as height restrictions?	Yes. The County Planning Board does consider efforts to reduce flood risks when reviewing applications; however, they are advisory to the County Planning Department and Local Boards.
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	N/A

9.1.5 Growth/Development Trends

Understanding how past, current, and projected development patterns have or are likely to increase or decrease risk in hazard areas is a key component to appreciating a jurisdiction’s overall risk to its hazards of concern. Recent and expected future development trends, including major residential/commercial development and major infrastructure development, are summarized in Table 9.1-11 and Table 9.1-12. Building permits for new construction are issued at the local level.

Table 9.1-11. Recent Major Development and Infrastructure from 2018 to Present

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
New Highway Facility	Building	5	26 Scotland Hill Rd	-	Complete
Reconstruction of River Road in Grandview-on-Hudson	Road and drainage	1.7 miles of road	River Rd., Grandview-on-Hudson	-	Complete
Replacement of West Washington Avenue Bridge	Bridge replacement	1	West Washington Avenue in Town of Orangetown	-	In Progress

* Only location-specific hazard zones or vulnerabilities identified.

Table 9.1-12. Known or Anticipated Major Development and Infrastructure in the Next Five Years

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
Shoreline stabilization in Town of Haverstraw	Shoreline stabilization	-	Bowline Park	-	In process of getting environmental approvals

* Only location-specific hazard zones or vulnerabilities identified.

9.1.6 Jurisdictional Risk Assessment

The hazard profiles in Volume I provide detailed information regarding each planning partner’s vulnerability to the identified hazards, including summaries of the County’s risk assessment results and data used to determine the hazard ranking. Key local risk assessment information is presented below.

Hazard Event History

Rockland County has a history of natural and non-natural hazard events, as detailed in Volume I, Section 4 (Risk Assessment). A summary of historical events is provided in each of the hazard profiles and includes a chronology of events that have affected the County and its municipalities.

Hazard Ranking and Vulnerabilities

The hazard profiles in Volume I have detailed information regarding each planning partner’s vulnerability to the identified hazards. The following presents key risk assessment results for Rockland County.

Hazard Ranking

This section provides the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Volume 1, Section 4 (Risk Assessment). The ranking process involves an assessment of the likelihood of occurrence for each hazard; the potential impacts of the hazard on people, property, and the economy; and community capabilities to address the hazard and changing future climate conditions. Mitigation action development uses the inputs from the evaluation to target those hazards with the highest level of concern.

As discussed in Volume 1, Section 4.4 (Hazard Ranking), each participating jurisdiction has differing degrees of risk exposure and vulnerability compared with the County as a whole. Refer to Section 4.4 (Hazard Ranking) for countywide rankings of each hazard.

Critical Facilities

Table 9.1-13 identifies critical facilities in the community located in the 1 percent and 0.2 percent annual chance floodplains.

Table 9.1-13. Critical Facilities Flood Vulnerability

Name	Type	Vulnerability		Addressed by Proposed Action	Already Protected to 0.2% Flood Level (describe protections)
		1% Event	0.2% Event		
Rockland Print Co Dam	Dam	X	X	2024-Rockland County-014	No
Rockland Print Co Dam #2 (significant hazard)	Dam	X	X	2024-Rockland County-014	No

Source: Rockland County 2023, FEMA

In addition to critical facilities that are exposed to flooding, the following high hazard dams are in or could impact Rockland County:

- Central Nyack Dam

- Lake Suzanne Dam
- Lake Lucille Dam
- Lake Kanawauke Dam
- Potake Lake Dam
- Pine Grove Lake Dam
- Congers Lake Dam
- First Reservoir Dam
- Garnerville Dam
- Lake Welch Dam
- Lake Sebago Dam
- Lake Deforest Dam
- Tivoli Lake Dam

Identified Issues

After review of the County’s hazard event history, hazard rankings, hazard location, and current capabilities, the County identified the following vulnerabilities within their community:

- Rockland County has identified emergency shelters to use as needed during flooding and landslides due to dam/levee failures, intense precipitation during severe storms, snowmelt from severe winter storms; extreme temperatures; wildfires; as well as PPE distribution and medical testing during disease outbreaks. Shelters can also provide water and resources during periods of drought. However, the medical capabilities and needs of each shelter needs to be documented. The County needs to develop an inventory of shelters, their capabilities, and what is needed at each to address health concerns and assure the well-being of residents utilizing the shelters, including socially vulnerable populations. During heavy rain and snow events, Routes 303 and 59 near the Palisades Mall are susceptible to flooding which leads to road closures, flood damage, and impacts emergency response to this area of the County. Route 59 is a state road and the County and municipalities do not have jurisdiction over the road and cannot implement mitigation measures. Beach Road, a County road, floods from excessive precipitation from severe storms and severe winter storms with no evacuation route for residents who reside in Stony Point. A Dam/Levee failure may also result in Beach Road flooding with no evacuation route. Disease outbreak incidents can occur anywhere in the County and may result in loss of life if left untreated. Recent outbreak includes the COVID-19 outbreak in 2020. This outbreak resulted in over 900 deaths (from 2020 to 2023) in the County. This type of outbreak has an immediate impact on all healthcare facilities in the County (e.g. hospitals, nursing homes, adult care facilities, etc.) that includes scarce resources (personal protective equipment [PPE], medical personnel) and services (preventative services such as immunizations and elective surgeries).
- Several streambanks in Rockland County, including Minisceongo Creek near Samsondale Road and DMV parking lot, Pascack Brook near Memorial Park in Spring Valley, and the Mahwah River in Suffern are in need of stabilization along embankments due the increase in frequency and severity of precipitation events. If these streambanks fail, sewer lines and water quality will be significantly impacted, nearby roads will experience flooding, and the potential for landslides to occur increases Spook Rock Road Dam is

regulated by NYSDEC and does not meet modern standards. It needs upgrades and replacements to satisfy NYSDEC standards. Garnerville Dam and Suffern Lane Dam are both deficient and need to be upgraded and strengthened to prevent dam breaks or overtopping during flood events caused by extreme precipitation or severe storms. The dams were combined by the NYSDEC because they are close to each other and have overlapping inundation zones. There is flooding in Memorial Park, which is located in the Village of Spring Valley (an Environmental Justice area) due to an increase in frequency and intensity of precipitation events. The County has large debris removals that need to be performed after natural hazard events and it can be a very labor intensive and money intensive process. Some hazard events such as severe storms, fires and earthquakes can lead to a buildup of debris that has the potential to clog or dam waterbodies, leading to increased flood hazards. The County does not have equipment to help clear roadways during flood events, which is an issue that is becoming more and more frequent with an increase in intensity and frequency of precipitation events. Flooded roads may negatively impact the transportation of emergency responders. Natural disasters such as earthquakes, floods, dam/levee failures, landslides, severe storms, winter storms and wildfires may lead to road closures and necessary detours. During these disasters, road closures and/or power outages affect traffic flow. Detours and barricades are used for temporary closures; however, road closures may extend beyond the event until repairs can be made, and emergency signage is needed to alert the public and emergency responders of traffic issues. While the County focuses on completing projects that will ensure a more sustainable and resilient Rockland County, the County does not have a person responsible for coordinating sustainability efforts throughout Rockland County. This means that the County does not develop actions that consider long-term risks or impacts due to climate change from dam/levee failures, droughts, earthquakes, extreme temperatures, floods, landslides, severe storms, severe winter storms, and wildfires. The West Washington Avenue Bridge, which carries County Route 30 over the Pascack Brook, has outlived its useful service life and needs replacement. The roadway approaches are sharp turns on steep grades and are difficult to navigate during adverse weather conditions. The channel alignment of Pascack Brook in relation to West Washington Avenue in the vicinity of the bridge results in embankment scour and roadway flooding during extreme storm events.

- The County has socially vulnerable populations that have accessibility issues in terms of access to emergency notifications. The following critical facilities are located floodplain and identified as vulnerable to the flood, dam failure, and severe storm hazards: Rockland Print County Dam and Rockland Print County Dam #2. The latter of these dam is noted as a significant hazard. Both dams are owned by the Rockland County Drainage Agency.

**This issue was identified as a specific area of concern based on resident response to the Rockland County Hazard Mitigation Citizen survey.*

9.1.7 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and prioritizes actions to address over the next five years.

Past Mitigation Initiative Status

Table 9.1-14 indicates progress on the County's mitigation strategy identified in the 2019 HMP. Actions that are still recommended but not completed or that are in progress are carried forward and combined with new actions as part of the mitigation strategy for this plan update. Previous actions that are now ongoing programs and capabilities are indicated as such and are presented in the capability assessment earlier in this annex.

Additional Mitigation Efforts

In addition to the mitigation initiatives completed in Table 9.1-14, Rockland County identified the following mitigation efforts completed since the last HMP:

- Completion of new Grassy Point Bridge over Minisceongo Creek in the Town of Haverstraw in November 2023
- Culvert assessments w/ Soil and Water – assessments finished but inventory documents need to be complete (Ramapo and Clarkstown)

Since the adoption of the County's first HMP, Rockland County has made significant mitigation progress in the following areas:

- The Open Space Acquisition Program first launched in 1999 when County Executive C. Scott Vanderhoef announced the County's would acquire areas of scenic beauty, environmentally sensitive lands, farms, and Hudson River waterfront areas. He realized the importance of protecting the rapidly disappearing natural, cultural, and historic resources in Rockland County and decided to take action to protect these important features for the future by creating the program.
 - Between 1999 and 2010, 31 individual properties were acquired preserving 1,204 acres of land. A total of \$23,300,000 in County funds were expended while \$11,576,000 in state grants and partnerships with Land Trusts and local municipalities were leveraged. The Open Space Acquisition Program has successfully provided access to the Hudson River (27 acres), preserved steep slopes (500 acres), protected wetlands (350 acres), and preserved a valuable historic resource (0.5 acres). The remaining acreage includes floodplains, scenic vistas, and properties to provide access to other parklands. These parcels are scattered throughout the five Towns in the County and offer a variety of recreational opportunities.
 - In 2020, the Program was resurrected, and the County funded the program with \$30 million. Between 2023 and 2024, 39 acres of land have been acquired to preserve from development.

Table 9.1-14. Status of Previous Mitigation Actions

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
RC-001	Enhance Education and Outreach	All Hazards	RCOFES	Expand GIS via acquisition of HAZUS-MH to collect and develop more sophisticated mapping and loss estimation to include future changing conditions. Ensure information will be available to the public and to relevant communities and agencies.	1. Ongoing Capability 2. County continues to make updates to their GIS data; share information with all departments when that comes in	1. Discontinue 2. N/A 3. This is an ongoing capability that the County continues to make updates and share information accordingly.
RC-002	Review existing emergency response plans	All Hazards	RCOFES and Planning Department supporting all municipalities	Review existing plans for enhancement opportunities: work with social support agencies, homeowners associations and general public to develop and implement monitoring and warning systems focused on vulnerable populations and provision of adequate shelter facilities	1. Ongoing Capability 2. The County Office of Fire and Emergency Services continues to work with the County VOAD to expand and maintain the Web bases Access and Functional Needs Registry. Health Care Facilities are contacted every six months to update their facility's information. Bi-annually, an electronic copy of registrants is shared with each municipality.	1. Discontinue 2. N/A 3. The County Office of Fire and Emergency Services continues to work with the County VOAD to expand and maintain the Web bases Access and Functional Needs Registry. Health Care Facilities are contacted every six months to update their facility's information. Bi-annually, an electronic copy of registrants is shared with each municipality.
RC-003	HMP Integration	All Hazards	RCOFES and Planning Department supporting all municipalities	Fully integrate the results and recommendations of this HMP into the pending update of the County Comprehensive Emergency Management Plan.	1. Ongoing Capability 2. The County has begun the process of incorporating recommendations from the HMP into the CEMP.	1. Discontinue 2. N/A 3. The County has begun the process of incorporating recommendations from the HMP into the CEMP.
RC-004	Determine the year built and level of protection for critical emergency facilities and shelters	All Hazards	RCOFES, Department of General Services – Facilities Management and Capital Projects Division, Planning Department, and municipal agencies	Determine the year built and level of protection for critical emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide some degree of protection from natural hazards, and pursue potential mitigation opportunities to protect these sites as funding becomes available; if located in the floodplain protect to the 500-year event.	1. Ongoing Capability 2. N/A	1. Discontinue 2. N/A 3. This is an ongoing capability; therefore, it will not be included in the 2024 HMP.

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
RC-005	Ensure continuity of operations at County buildings and shelters	All Hazards	RCOFES	Ensure continuity of operations at County buildings and shelters: <ul style="list-style-type: none"> Rockland Community College – final stage to secure contractor (GOSR funding \$1.3M) County Office Building (Capital Program) Highway Building (Capital Program) 	<ol style="list-style-type: none"> In Progress The installation of the emergency generator for the Rockland Community College Fieldhouse in nearing completion. The generator has been delivered and the electrical contractor is finishing his site work. The foundation of several of the buildings at the new County Highway Garage have been poured. Structural steel has been erected at two of the buildings. 	<ol style="list-style-type: none"> Discontinue N/A Generators have either been purchased and installed or in the process of being installed at the three facilities; therefore, this project will not be included in the 2024 HMP.
RC-006	Medical Needs at Shelters	All Hazards	RCOFES	Rockland County OFES will explore and document the consideration for medical needs at identified shelters in the County and include as part of the update of the County Emergency Management Plan or the Countywide Sheltering Plan.	<ol style="list-style-type: none"> In Progress Staffing of Special Needs shelters continue to be a hurdle. We may need to focus on identifying one facility within the county. 	<ol style="list-style-type: none"> Include in the 2024 HMP Rockland County OFES will explore and document the consideration for medical needs at identified shelters in the County and include as part of the update of the County Emergency Management Plan or the Countywide Sheltering Plan. N/A
RC-007	Redundant Backup Public Safety Radio	All Hazards	RCOFES	Redundant Backup Public Safety Radio to be developed to provide backup for 911 dispatch and cellular 911 phone calls	<ol style="list-style-type: none"> Completed The backup 911 Dispatch Center has been completed. 	<ol style="list-style-type: none"> Discontinue N/A Project has been completed; therefore, it will not be included in the 2024 HMP.
RC-008	Construct a new animal shelter facility	All Hazards	General Services	Construct a new animal shelter facility	<ol style="list-style-type: none"> In Progress Site work is set to commence on the new building this summer. Rockland Green has made an offer to take on the responsibility of managing the shelter. Legislature and County Executive reviewing pros and cons. 	<ol style="list-style-type: none"> Discontinue N/A Project is in progress and work will begin in summer 2024; therefore, it will not be included in the 2024 HMP.
RC-009	Upgrade radio communications room, equipment; and deploy new records management system	All Hazards	General Services	Upgrade radio communications room, equipment; and deploy new records management system being implemented in Sheriff Department that the local police can use (countywide system)	<ol style="list-style-type: none"> In Progress The County has partially rolled out the Spellman Software. The towns of Haverstraw, Orangetown and Stony Point as well as Villages of Suffern, Piermont, and South Nyack Grandview are currently utilizing the system. 	<ol style="list-style-type: none"> Discontinue N/A Project is in progress and upgrades are being made; therefore, it will not be included in the 2024 HMP.

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
RC-011	Ensure that the local comprehensive plans incorporate hazard areas, changing conditions, and natural disaster mitigation techniques	All Hazards	County Planning; RCOFES; supporting all municipalities	Ensure that the local comprehensive plans incorporate hazard areas, changing conditions, and natural disaster mitigation techniques through a courtesy review of draft plans by the County Planning Department.	1. Ongoing Capability 2. Local comprehensive plans are completed by their respective municipalities. The County Planning Department provides recommendations for local comprehensive plans through the GML Review process; however, the County Planning Department cannot ensure that its recommendations are incorporated. Hazard areas will be incorporated into the County Comprehensive Plan.	1. Discontinue 2. N/A 3. This is an ongoing capability, and the Planning Department provides recommendations for local comprehensive plans through the GML Review process; however, the County Planning Department cannot ensure that its recommendations are incorporated. Hazard areas will be incorporated into the County Comprehensive Plan.
RC-012	Enhance GIS services and data in the County	All Hazards	Planning Department; RCOFES	Upgrade the County –based GIS emergency management application, targeted to local and County users, to support emergency management planning and response activities, which includes the input of such things as road closures and obstructions. Develop a mobile application for emergency service/responders regarding road closures/impediments; this will serve as a means to store historic information and to prioritize and strategy improvements and needs.	1. Ongoing Capability 2. Consolidated with RC-001 into a new action	1. Discontinue 2. N/A 3. This is an ongoing capability that the County continues to make updates and share information accordingly.
RC-013	GIS-based review software for Land Use Review and Permitting Committee	All Hazards	Code Enforcement Task Force	The Land Use Review and Permitting Committee, consisting of departments involved in the land planning review and/or permitting process, are looking to deploy a GIS-centric software solution, providing a central database solution. Those departments involved in land use reviews, permits, inspections and/or complaints would be provided access to the central repository for more efficient access to information and monitoring of land use activity.	1. In Progress – to be completed in 2024 2. This will be completed in 2024 and will be integrated with the local government departments as well.	1. Discontinue 2. N/A 3. This will be completed in 2024 and will be integrated with the local government departments as well.

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinued, explain why.
RC-014	Upgrade emergency power system at the New City yard	All Hazards	County Highway Department	New City yard still needs to be updated; currently built a substation on Hunt Road yard (built 2016) that does not have emergency power. This project will service the Highway Department and County Complex as well.	1. Completed 2. Highway has moved to a new facility with emergency power.	1. Discontinue 2. N/A 3. Department moved to new facility
RC-015	Relocate/construct a new highway department facility with emergency backup power out of the floodplain.	Flood, Severe Storm	County Highway Department	Relocate/construct a new highway department facility with emergency backup power out of the floodplain.	1. Complete 2. The department moved into the new facility in November 2023.	1. Discontinue 2. N/A 3. The new facility was completed in November 2023
RC-016	Enhance scour protection on County bridges	Flood, Severe Storm, Severe Winter Storm	County Highway Department	Enhance scour protection on County bridges; not every bridge is built to current scour protection standards (standard changed 2006/2007 timeframe); require to drive the piles and expensive upgrade	1. Ongoing Capability 2. All new bridge replacement projects require scour protection analysis and design to meet NYS DOT Specifications.	1. Discontinue 2. N/A 3. This is an ongoing capability and completed as needed; therefore, it will not be included as an action in the 2024 HMP
RC-017	Identify site(s) to utilize in an emergency to stockpile equipment, snow, and/or debris	All	County Highway Department; municipalities	Identify site(s) to utilize in an emergency to stockpile equipment, snow, and/or debris. Further, develop a stockpile of material/equipment (or access to) for work to respond in a timely fashion.	1. Ongoing Capability 2. County Highway has increased capacity from construction of new facility	1. Discontinue 2. N/A 3. This is an ongoing capability, and the County will continue to stockpile equipment as needed.
RC-018	Develop a robust communication system or plan to allow interoperability in the County	All Hazards	County Highway Department	Develop a robust communication system or plan to allow interoperability in the County to communicate on the same channel; redundancy is needed; and communicate with municipalities	1. Ongoing Capability 2. County performs this and makes updates as necessary	1. Discontinue 2. N/A 3. This is an ongoing capability, and the County performs updates and enhancements as necessary.
RC-019	Pascack Brooke Easement	Flood, Severe Storm, Severe Winter Storm	County Drainage Agency	Stabilize banks and implement erosion control to reduce flooding including concrete structures and plantings.	1. In Progress – near completion; funded through HMGP 2. N/A	1. Discontinue 2. N/A 3. This project is near completion; therefore, it will not be included in the 2024 HMP.

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
RC-020	Enhance the current mapping capabilities	All Hazards	Rockland County Highway Department	Enhance the current mapping capabilities and purchase hand-held portable devices for use to capture data in the field during emergencies.	1. In Progress – Highway Dept. starting GIS within the department and will be purchasing tablets to use with GIS. 2. N/A	1. Discontinue 2. N/A 3. The County is purchasing the tablets in 2024 and will use the tablets to enhance mapping capabilities while in the field.
RC-021	Conduct a countywide culvert study to determine if upgrades are needed for crossings in the County right-of-way.	Flood, Severe Storm, Severe Winter Storm		Conduct a countywide culvert study to determine if upgrades are needed for crossings in the County right-of-way.	1. Complete 2. Soil & Water completed this project; data is publicly available; completed in Summer 2023 (countywide)	1. Discontinue 2. N/A 3. Project has been complete; therefore, it will not be included in the 2024 HMP
RC-022	Rebuild the Spook Rock Road Spillway	Flood, Severe Storm, Severe Winter Storm	Rockland County Highway Department	Rebuild the Spook Rock Road Spillway	1. In Progress 2. Engineering design underway.	1. Discontinue 2. N/A 3. The County is completing an engineering design and will move forward with rebuilding the spillway once the design is complete.
RC-023	Elevate Beach Road	Flood, Severe Storm	Rockland County Highway Department,	Elevate Beach Road (County Road) (approximately 2-3 feet) to provide access to residents to evacuate flooding (Stony Point)	1. No Progress 2. Project requires adjustment of sanitary sewer main and raising first floor elevation of residences along the road.	1. Include in the 2024 HMP 2. Complete a feasibility study to determine projects that will reduce flooding and provide access to residents living along Beach Road in Stony Point. 3. N/A
RC-024	Armor shoreline to prevent erosion due to wave action in Grassy Point, Stony Point (Town of Haverstraw to intersection with Tompkins Cove hamlet)	Flood, Severe Storm, Severe Winter Storm	Towns of Haverstraw and Stony Point	Armor shoreline to prevent erosion due to wave action in Grassy Point, Stony Point (Town of Haverstraw to intersection with Tompkins Cove hamlet)	1. Complete 2. Project finished in November 2023	1. Discontinue 2. N/A 3. Project completed.
RC-025	Conduct a study to determine feasible mitigation measures to address flooding in Suffern Squires Gate neighborhood	Flood, Severe Storm, Severe Winter Storm	Rockland County Drainage Agency	Conduct a study to determine feasible mitigation measures to address flooding in Suffern Squires Gate neighborhood	1. Complete 2. Study was funded by New York Rising program. In 2022, Suffern acquired 58 properties and demolished buildings, preserving the land for open space.	1. Discontinue 2. N/A 3. Project completed.

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
RC-026	Conduct a Muddy Creek Flood Mitigation Study	Flood, Severe Storm, Severe Winter Storm	Drainage Agency	Conduct a Muddy Creek Flood Mitigation Study to explore mitigation actions to reduce/eliminate impacts to existing development	1. Complete. 2. Difficult project; Town did not indicate interest.	1. Discontinue 2. N/A 3. Studies completed for nearby waterbodies include some findings for Muddy Creek.
RC-027	Coordinate with NYS to identify mitigation measures to reduce impacts from flooding at the Palisades Mall (Route 303 and 59)	Flood, Severe Storm	Drainage Agency, NYS DOT, Clarkstown	Coordinate with NYS to identify mitigation measures to reduce impacts from flooding at the Palisades Mall (Route 303 and 59)	1. In Progress 2. The County has been talking with USACE,	1. Include in the 2024 HMP 2. Coordinate with NYS to identify mitigation measures to reduce impacts from flooding at the Palisades Mall (Route 303 and 59) 3. N/A
RC-028	Repair and consider upsizing six Rockland County storm drainage culverts	Flood, Severe Storm	Rockland County Highway Department, NYSDOT, Federal Highway Administration	Repair and consider upsizing six Rockland County storm drainage culverts that were damaged by Hurricane Irene. The proposed work locations are as follows: <ul style="list-style-type: none"> • CR 106, Route 210, just west of Central Highway in the Town of Stony Point • CR 23, Sickletown Road, just south of the Palisades Interstate Parkway bridge in the Town of Orangetown • CR 23, Strawtown Road, just south of Germonds Road in the Town of Clarkstown • CR 108, Old Route 210, just west of Wayne Avenue in the Town of Stony Point • CR 23, Sickletown Road, just north of Fifth Avenue in the Town of Orangetown • CR 15, Western Highway, just north of Convent Road in the Town of Orangetown 	1. Completed 2. Repairs to culverts have been performed.	1. Discontinue 2. N/A 3. Project has been complete; therefore, it will not be included in the 2024 HMP

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
RC-029	Purchase inflatable tiger dam barrier system to deploy to locations in the County as needed	Flood, Severe Storm	Drainage Agency	Purchase inflatable tiger dam barrier system to deploy to locations in the County as needed to replace time-consuming and labor-intensive sandbags. This will help the county deploy a temporary mitigation measure to areas that flood in the future with a current unknown flood risk (changing future conditions/climate change).	1. Complete – County funded 2. N/A	1. Discontinue 2. N/A 3. Project has been complete; therefore, it will not be included in the 2024 HMP
RC-030	Purchase and install five Kohler Generac Generators	All Hazards	Rockland County Solid Waste Management Authority	Purchase and install five Kohler Generac Generators (150 KW, 480V, 3Phase powered by natural gas). Back-up power is needed at each of the Authority’s three transfer stations, at the Authority’s Materials Recovery Facility (MRF), and at the Authority’s Household Hazardous Waste Facility (HHW) in order to maintain materials management operations and fuel dispensing at such times that there may be severe storms or emergencies with loss of power. Maintaining waste management operations without loss of service is critical to the health, safety, and well-being of the communities within the Service Unit area.	1. No Progress 2. N/A	1. Discontinue 2. N/A 3. No funding has been secured for this project to date.
RC-031	Develop a plan to cover the five towns and 19 villages in the County to integrate roles and responsibilities between all jurisdictions and the Rockland County Solid Waste Management Authority	All Hazards	Rockland County Solid Waste Management Authority; municipalities	Develop a plan to cover the five towns and 19 villages in the County to integrate roles and responsibilities between all jurisdictions and the Rockland County Solid Waste Management Authority	1. No Progress 2. N/A	1. Discontinue 2. N/A 3. The Authority continues to use its existing Solid Waste Management Plan.

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
RC-032	Develop Road/Stream Crossing Management Plans	Flood, Severe Storm, Severe Winter Storm	Rockland County Soil & Water Conservation District	Develop Road/Stream Crossing Management Plans for climate-resilient and fish-friendly road/stream crossings in Hudson River Valley through 2018	1. In Progress 2. Rockland SWCD shifted from Management Plans to providing assessments of road-stream crossings along with a Town Level Inventory Document. We no longer offer the Management Plan. We have completed three Town Inventory Documents for Stony Point, Haverstraw and Orangetown. We just completed all assessments for Ramapo and will work on their Town Inventory Document to be completed in 2023. Clarkstown will take 2 summers to complete assessments and then another year following that to complete their inventory document. Hydrologic modeling is completed by NYS DEC in partnership with Cornell WRI which takes time to receive back. This data is necessary to complete the Town Level Inventory Documents. In all, we anticipate completing the whole County (all 5 towns) by 2026.	1. Discontinue 2. N/A 3. Rockland SWCD shifted from Management Plans to providing assessments of road-stream crossings along with a Town Level Inventory Document. We no longer offer the Management Plan. We have completed three Town Inventory Documents for Stony Point, Haverstraw and Orangetown. We just completed all assessments for Ramapo and will work on their Town Inventory Document to be completed in 2023. Clarkstown will take 2 summers to complete assessments and then another year following that to complete their inventory document. Hydrologic modeling is completed by NYS DEC in partnership with Cornell WRI which takes time to receive back. This data is necessary to complete the Town Level Inventory Documents. In all, we anticipate completing the whole County (all 5 towns) by 2026.
RC-033	Obtain data and mapping from MS4 Program	Flood, Severe Storm, Severe Winter Storm	Cornell Cooperative Extension Stormwater Consortium of Rockland County – grant administrator and subcontracting to Cornell Cooperative Extension	The Stormwater Consortium will work with the County to obtain data and mapping from MS4 program from Villages and Town integrate into the County GIS map portal. Data standardization is needed of outfall locations and attributes based on differing users and use of the data.	1. Ongoing Capability – County will need to upgrade as part of the new requirements 2. The County continues to discuss this issue with the Stormwater Consortium.	1. Discontinue 2. N/A 3. The Stormwater Consortium will work with the County to obtain data and mapping from MS4 program from Villages and Town integrate into the County GIS map portal. Data standardization is needed of outfall locations and attributes based on differing users and use of the data.

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
RC-034	Watershed Assessment and Management Plan for this tri-county resource (Orange, Rockland, Bergen)	Flood, Severe Storm, Severe Winter Storm	Rockland County Soil & Water Conservation District	The Ramapo River, considered a sole source aquifer, provides drinking water to over 81,000 residents of Rockland County and northern New Jersey. The Rockland County Task Force on Water Resources Management has contracted with Rutgers University to complete a Watershed Assessment and Management Plan for this tri-county resource (Orange, Rockland, Bergen). The plan will include both the Ramapo and Mahwah Rivers watershed area. The final plan will include recommendations on source water protection and improve water qualities of these waterways.	1. Completed 2. Completed within the last 5 years	1. Discontinue 2. N/A 3. Plan has been completed; therefore, this action will not be included in the 2024 HMP.
RC-035	Continue to identify funding sources and acquire open space in the County to increase flood storage.	Flood, Severe Storm	Rockland County Soil & Water Conservation District	Continue to identify funding sources and acquire open space in the County to increase flood storage.	1. In Progress – more funding received to acquire additional properties; completed 1 st round to acquire 12 properties and now starting the 2 nd round to assess properties to acquire 2. N/A	1. Include in the 2024 HMP 2. Continue to identify funding sources and acquire open space in the County to increase flood storage. 3. N/A
RC-036	Replace aging on-site emergency generators, fuel tanks and transfer switches at sewage pumping stations.	All Hazards	Rockland County Sewer District	Replace aging on-site emergency generators, fuel tanks and transfer switches at sewage pumping stations. At this time 21 of the 27 locations have been identified.	1. Complete 2. N/A	1. Discontinue 2. N/A 3. Project has been completed

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
RC-037	Identify feasible and cost-effective mitigation measures to protect County-owned pump stations	Flood, Severe Storm	Rockland County Sewer District	Identify feasible and cost-effective mitigation measures to protect the following County-owned pump stations to the 500-year event including purchasing and utilizing portable flood barriers to protect in the short-term: <ul style="list-style-type: none"> • Pascack Pump Station • Fourth Street Pump Station • Mahwah Pump Station • Montebello Pump Station • Pomona Heights Pump Station • Lincoln Street Pump Station 	1. Complete 2. N/A	1. Discontinue 2. N/A 3. Inflatable barriers were purchased to use to protect these structures from flooding.

Proposed Hazard Mitigation Initiatives for the HMP Update

Rockland County participated in the mitigation strategy workshop for this HMP to identify appropriate actions to include in a local hazard mitigation strategy. Its comprehensive consideration of all possible activities to address hazards of concern included review of the following FEMA documents:

- FEMA 551 “Selecting Appropriate Mitigation Measures for Floodprone Structures” (March 2007)
- FEMA “Mitigation Ideas—A Resource for Reducing Risk to Natural Hazards” (January 2013).

The action worksheets included at the end of this annex list the mitigation actions that the county would like to pursue in the future to reduce the effects of hazards. The actions are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in the county’s priorities.

Table 9.1-15 indicates the range of proposed mitigation action categories. The four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table to further demonstrate the wide range of activities and mitigation measures selected.

Volume I identifies 14 evaluation criteria for prioritizing the mitigation actions. To assist with rating each mitigation action as high, medium, or low priority, a numeric rank is assigned (-1, 0, or 1) for each of the evaluation criteria.

Table 9.1-15 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Table 9.1-15. Analysis of Mitigation Actions by Hazard and Category

Hazard	Actions That Address the Hazard, by Action Category									
	FEMA				CRS					
	LPR	SIP	NSP	EAP	PR	PP	PI	NR	SP	ES
Dam Failure	3	8	-	2	2	3	2	-	2	4
Disease Outbreak	3	2	-	1	2	-	1	-	-	3
Drought	3	1	-	1	2	-	1	-	-	2
Earthquake	3	3	-	1	2	-	1	-	-	4
Extreme Temperature	3	1	-	1	2	-	1	-	-	2
Flood	5	10	-	2	2	4	2	2	3	5
Landslide	3	4	-	1	2	1	1	1		4
Severe Weather	5	10	-	2	2	4	2	2	3	5
Severe Winter Weather	5	7	-	1	2	2	1	1	1	5
Wildfire	3	3	-	1	2	-	1	-	-	4

Local Plans and Regulations (LPR)—These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.

Structure and Infrastructure Project (SIP)—These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct structures to reduce the impact of hazards.

Natural Systems Protection (NSP)—These are actions that minimize damage and losses and preserve or restore the functions of natural systems.

Education and Awareness Programs (EAP)—These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities

Preventative Measures (PR)—Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.

Property Protection (PP)—These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.

Public Information (PI)—Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.

Natural Resource Protection (NR)—Actions that minimize hazard loss and preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.

Structural Flood Control Projects (SP)—Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.

Emergency Services (ES)—Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities.

Table 9.1-16. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Other Community Objectives	Total	High / Medium / Low
2024-Rockland County-01	Medical Needs at Shelters	1	1	1	1	1	0	0	1	1	1	0	1	1	1	11	High
2024-Rockland County-02	Reduce Flood Impacts at Palisades Mall	1	1	1	1	0	0	0	1	1	1	1	1	1	1	11	High
2024-Rockland County-03	Elevate Beach Road	1	1	1	1	1	0	1	1	1	1	1	1	1	1	13	High
2024-Rockland County-04	Identify and Accommodate County Facilities for Disease Outbreak Response	1	1	1	0	1	1	1	1	1	1	0	1	1	1	12	High
2024-Rockland County-05	Streambank Stabilization	1	1	1	1	1	-1	1	1	1	1	1	1	1	1	12	High
2024-Rockland County-06	Dam Rehabilitation	1	1	1	1	1	-1	1	1	1	1	1	1	1	1	12	High
2024-Rockland County-07	Pascack Brook Flood Mitigation Project	1	1	1	1	1	-1	1	1	1	1	1	1	1	1	12	High
2024-Rockland County-08	Large Capacity Dump Trailer	0	1	0	0	1	0	1	0	1	1	0	1	0	0	6	Medium
2024-Rockland County-09	Portable Pumps	1	1	1	0	1	0	0	0	1	1	1	1	1	0	9	Medium
2024-Rockland County-10	Temporary Traffic Signals	1	1	0	0	1	0	0	0	1	1	1	0	1	0	7	Medium
2024-Rockland County-011	Sustainability Coordinator for Rockland County	1	1	1	1	1	1	1	0	1	1	1	1	0	1	12	High

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Other Community Objectives	Total	High / Medium / Low
2024-Rockland County-012	Replacement of West Washington Avenue Bridge over Pascack Brook	1	1	1	0	0	0	0	1	1	1	1	1	1	0	9	Medium
2024-Rockland County-013	Emergency Notifications for Residents with Accessibility Issues	1	1	1	0	1	0	0	1	1	1	0	1	1	0	9	Medium
2024-Rockland County-014	Critical Facilities in the Floodplain	0	1	1	0	0	0	0	0	1	1	1	1	1	0	7	Medium

Note: Volume 1, Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14).

Action 2024-Rockland County-01. Medical Needs at Shelters

Action Name:	Medical Needs at Shelters		
Description of the Problem:	Rockland County has identified emergency shelters to use as needed during flooding and landslides due to dam/levee failures, intense precipitation during severe storms, snowmelt from severe winter storms; extreme temperatures; wildfires;, as well as PPE distribution and medical testing during disease outbreaks. Shelters can also provide water and resources during periods of drought. However, the medical capabilities and needs of each shelter needs to be documented. The County needs to develop an inventory of shelters, their capabilities, and what is needed at each to address health concerns and assure the well-being of residents utilizing the shelters, including socially vulnerable populations		
Hazard(s) of Concern:	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire	
Description of the Solution:	Rockland County OFES will explore and document the consideration for medical needs at identified shelters in the County and include as part of the update of the County Emergency Management Plan or the Countywide Sheltering Plan. This can include preparedness planning, stockpiling medical supplies and equipment, implementing health screening and assessment processes, training, outreach, and coordination.		
Lead Agency:	Rockland County Office of Fire and Emergency Services		
Supporting Agencies:	Rockland County Department of Health		
Estimated Cost:	\$50,000		
Potential Funding Sources:	County Budget		
Implementation Timeline:	Within five years		
Goals Met:	1, 2, 3		
Benefits:	This action provides resources and shelter for residents after disasters; assists with emergency management response in the County; serves vulnerable populations.		
Mitigation Action Type:	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category:	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	Provides services to socially vulnerable populations that may use shelters during emergencies		
Impact on Critical Facilities/Lifelines:	This project is related to critical facilities and community lifelines in Rockland County and will enhance the services shelters provide during emergencies.		
Impact on Capabilities:	This project will be incorporated into the County’s CEMP and sheltering plan.		
Impact on Future Development:	N/A		
Climate Change Considerations:	N/A		
Priority:	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action	Evaluation	
	No action	Current problem continues	
	Contract outside medical providers to assist in shelters when needed	Not feasible during emergencies; costly	
	Send sheltered residents to local hospitals for medical care	Not preferred post-disaster as it may have life-safety impacts due to delay of care	

Action 2024-Rockland County-02. Reduce Flood Impacts at Palisades Mall

Action Name:	Reduce Flood Impacts at Palisades Mall		
Description of the Problem:	During heavy rain and snow events, Routes 303 and 59 near the Palisades Mall are susceptible to flooding which leads to road closures, flood damage, and impacts emergency response to this area of the County. Route 59 is a state road and the County and municipalities do not have jurisdiction over the road and cannot implement mitigation measures.		
Hazard(s) of Concern:	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The County will complete a feasibility study to determine options to reduce or eliminate flooding in this section of the County and will implement the best and most cost-effective solutions. The County will also coordinate with New York State to address cost effective solutions to mitigate flood issues along Route 59.		
Lead Agency:	Rockland County Highway Department and Drainage Agency		
Supporting Agencies:	NYSDOT, Town of Clarkstown		
Estimated Cost:	High (> \$1,000,000)		
Potential Funding Sources:	FEMA BRIC and FMA, NYSDOT		
Implementation Timeline:	Within five years		
Goals Met:	1, 2, 4, 6		
Benefits:	This action allows for continuity of operations, reduces/eliminates flood damage, and keeps major roadways open and accessible.		
Mitigation Action Type:	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category:	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	Allows the road to remain accessible during emergencies		
Impact on Critical Facilities/Lifelines:	Allows the road to remain accessible during emergencies		
Impact on Capabilities:	N/A		
Impact on Future Development:	N/A		
Climate Change Considerations:	Climate change projections will be considered when developing the feasibility study and identifying mitigation measures to reduce or eliminate flooding		
Priority:	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action	Evaluation	
	No action	Current problem continues	
	Acquire all homes in this section of Clarkstown/Rockland County	Requires property owner consent to acquire homes; road will still flood and impact access points in the Town; costly	
	Elevate all homes in this section of Clarkstown/Rockland County	Requires property owner consent to elevate homes; road will still flood and impact access points in the Town; costly	

Action 2024-Rockland County-03. Elevate Beach Road

Action Name:	Elevate Beach Road		
Description of the Problem:	Beach Road, a County road, floods from excessive precipitation from severe storms and severe winter storms with no evacuation route for residents who reside in Stony Point. A Dam/Levee failure may also result in Beach Road flooding with no evacuation route.		
Hazard(s) of Concern:	<input checked="" type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The County will elevate Beach Road (County Road) (approximately two to three feet) to provide access to residents to evacuate flooding in Stony Point.		
Lead Agency:	Rockland County Highway Department and Engineer		
Supporting Agencies:	Town of Stony Point		
Estimated Cost:	\$1 million+		
Potential Funding Sources:	CDBG-DR, FEMA BRIC and FMA, County Budget		
Implementation Timeline:	Within five years		
Goals Met:	All		
Benefits:	The County will protect the roadway from future flood damages and allows it to remain open to access the Town		
Mitigation Action Type:	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category:	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	Allows the road to remain accessible during emergencies		
Impact on Critical Facilities/Lifelines:	Allows the road to remain accessible during emergencies		
Impact on Capabilities:	N/A		
Impact on Future Development:	N/A		
Climate Change Considerations:	The County will determine the height at which the road needs to be elevated and will consider climate change projections to ensure it is at a height that will be protected from future events		
Priority:	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action	Evaluation	
	No action	Current problem continues	
	Acquire all homes along Beach Road	Requires property owner consent to acquire homes; road will still flood and impact access points in the Town; costly	
	Elevate all homes along Beach Road	Requires property owner consent to elevate homes; road will still flood and impact access points in the Town; costly	

Action 2024-Rockland County-04. Identify and Accommodate County Facilities for Disease Outbreak Response

Action Name:	Identify and Accommodate County Facilities for Disease Outbreak Response		
Description of the Problem:	Disease outbreak incidents can occur anywhere in the County and may result in loss of life if left untreated. Recent outbreak includes the County COVID-19 outbreak in 2020. This outbreak resulted in over 900 deaths (from 2020 to 2023) in the County. This type of outbreak has an immediate impact on all healthcare facilities in the County (e.g. hospitals, nursing homes, adult care facilities, etc.) that includes scarce resources (PPE, medical personnel) and services (preventative services such as immunizations and elective surgeries).		
Hazard(s) of Concern:	<input type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The County will coordinate with hospitals and critical facilities to ensure all are prepared for a disease outbreak. The physical area to be affected will include healthcare facilities' ability to reorganize their existing space to accommodate the results of a disease outbreak. Facilities will need to be ready to quickly shift their existing space to accommodate sudden surges of patients while also providing space for day-to-day operations. County space will need to be identified to assist with any type of mass vaccination and testing. Currently there are plans to utilize the County's large indoor facilities such as Rockland Community College and the Palisades Mall to provide treatment to large number of County/regional residents.		
Lead Agency:	Rockland County Department of Health (in conjunction with the County's Sheriff's Office).		
Supporting Agencies:	NYS DOH, Rockland County Sheriff's Department and Rockland County's Five Towns.		
Estimated Cost:	Modifications to hospitals and to County sites may not cost much (re-design of existing space) or may cost \$2 million for the County's two major hospitals (\$1million per hospital).		
Potential Funding Sources:	FEMA HMGP		
Implementation Timeline:	Short-term (Two to three years)		
Goals Met:	1, 2, 5		
Benefits:	The benefits will be lifesaving. Loss of life will occur again if no financial resources are available to the County healthcare systems to deal with another COVID-19 pandemic scenario.		
Mitigation Action Type:	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category:	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	Most of the deaths that will occur there is a disease outbreak will affect underserved communities in the County. It did during COVID-19 and it will happen again if such a scenario would happen again in the County.		
Impact on Critical Facilities/Lifelines:	Providing increased services/spaces in healthcare facilities and in the County, will lessen the burden on the County's existing healthcare infrastructure and ultimately save lives.		
Impact on Capabilities:	N/A		
Impact on Future Development:	N/A		
Climate Change Considerations:	N/A		
Priority:	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action	Evaluation	
	No action	Current problem continues	

	Utilize healthcare facilities for response	Not feasible; healthcare facilities and hospitals will already be at capacity and unable to assist the County with day-to-day response and services related to disease outbreak events
	Stockpile supplies	While supplies are needed for response, it does not address the need for specific locations to provide vaccinations, etc.

Action 2024-Rockland County-05. Streambank Stabilization

Action Name:	Streambank Stabilization	
Description of the Problem:	Several streambanks in Rockland County, including Minisceongo Creek near Samsondale Road and DMV parking lot, Pascack Brook near Memorial Park in Spring Valley, and the Mahwah River in Suffern are in need of stabilization along embankments due the increase in frequency and severity of precipitation events. If these streambanks fail, sewer lines and water quality will be significantly impacted, nearby roads will experience flooding, and the potential for landslides to occur increases	
Hazard(s) of Concern:	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The County will conduct stream bank studies to determine what area need stabilization and the County will implement the best and most cost-effective solution. The following will also be completed to stabilize the streambanks in Rockland County: <ul style="list-style-type: none"> • Minisceongo Creek Embankment Stabilization near Samsondale Rd (embankment eroded exposing sewer waste line) • Minisceongo Creek Embankment Stabilization near DMV parking lot (just upstream of State Rt 9W): gabion basket retaining wall collapsed, we will do an emergency repair and look to stabilize the entire length of the South side of the Creek • Mahwah River Embankment Stabilization Project--stabilize a failed section of embankment along the Mahwah River in Suffern, NY to protect a large sewer line. 	
Lead Agency:	Rockland County Drainage Agency	
Supporting Agencies:	Rockland County Highway Department	
Estimated Cost:	High (> \$1,000,000)	
Potential Funding Sources:	NYSDEC Water Quality Improvement Project (WQIP) Program, USDA Emergency Watershed Protection Program (EWPP), County Budget, FEMA BRIC and HMGP	
Implementation Timeline:	Short-term (Two to three years)	
Goals Met:	1, 2, 7	
Benefits:	This action protects against infrastructure failure by embankment stabilizations, protect against loss of life or property in the case of a dam failures, enable Environmental Justice community to better utilize park and parking lot	
Mitigation Action Type:	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category:	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input checked="" type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	N/A	

Impact on Critical Facilities/Lifelines:	The County will stabilize embankments to protect sewer lines and bodies of water.		
Impact on Capabilities:	N/A		
Impact on Future Development:	N/A		
Climate Change Considerations:	Some erosion and flooding conditions may occur more frequently because of climate change; therefore, this project will help reduce the impacts of failing streambanks.		
Priority:	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action	Evaluation	
	No action	Current problem continues	
	Retreat from areas near stream	Costly, unpopular	
	Levees along stream	Not feasible/environmentally damaging, costly	

Action 2024-Rockland County-06. Dam Rehabilitation

Action Name:	Dam Rehabilitation	
Description of the Problem:	Spook Rock Road Dam is regulated by NYSDEC and does not meet modern standards. It needs upgrades and replacements to satisfy NYSDEC standards. Garnerville Dam and Suffern Lane Dam are both deficient and need to be upgraded and strengthened to prevent dam breaks or overtopping during flood events caused by extreme precipitation or severe storms. The dams were combined by the NYSDEC because they are close to each other and have overlapping inundation zones.	
Hazard(s) of Concern:	<input checked="" type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The County will replace spillway, replace parapet, and redo the roadway for Spook Rock Road Dam. In 2025, the County will contract an engineering firm to examine the Garnerville Dam and the Suffern Lane Dam (both along the Minisceongo Creek), and will implement cost-effective solutions to be rebuild and upgraded the dams.	
Lead Agency:	Rockland County Drainage Agency	
Supporting Agencies:	Rockland County Highway Department	
Estimated Cost:	High (>\$1,000,000)	
Potential Funding Sources:	FEMA High-Hazard Potential Dam (HHPD) program, NYSDEC County Budget	
Implementation Timeline:	Short-term (Two to three years)	
Goals Met:	1, 2, 7	
Benefits:	This action protects against infrastructure failure by embankment stabilizations, protect against loss of life or property in the case of a dam failures, enable Environmental Justice community to better utilize park and parking lot	
Mitigation Action Type:	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category:	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	N/A	

Impact on Critical Facilities/Lifelines:	The County will upgrade dams to help prevent failures and stabilize embankments to protect sewer lines		
Impact on Capabilities:	N/A		
Impact on Future Development:	N/A		
Climate Change Considerations:	Some erosion and flooding conditions may occur more frequently because of climate change; therefore, this project will help reduce the impacts of failing streambanks.		
Priority:	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action	Evaluation	
	No action	Current problem continues	
	Repair Only	Will not meet Dam Safety requirements	
	Remove Dam	Dam cannot be removed for safety reason.	

Action 2024-Rockland County-07. Pascack Brook Flood Mitigation Project

Action Name:	Pascack Brook Flood Mitigation Project		
Description of the Problem:	There is flooding in Memorial Park, which is located in the Village of Spring Valley (an Environmental Justice area) due to an increase in frequency and intensity of precipitation events.		
Hazard(s) of Concern:	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The County will hire an engineering firm to analyze and identify proposed solutions to flooding in Memorial Park in Spring Valley. This area of the County is identified as an environmental justice area and flooding in this area impacts the widely used park/playground/soccer fields, parking lot in the Village.		
Lead Agency:	Rockland County Drainage Agency		
Supporting Agencies:	Rockland County Highway Department, Spring Valley		
Estimated Cost:	High (> \$1,000,000)		
Potential Funding Sources:	FEMA BRIC and FMA, County Budget		
Implementation Timeline:	Short-term (Two to three years)		
Goals Met:	1, 2, 7		
Benefits:	This action protects against infrastructure failure by embankment stabilizations, protects against loss of life or property in the case of a dam failures, and enables Environmental Justice community to better utilize park and parking lot		
Mitigation Action Type:	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category:	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	Pascack Brook Flood Mitigation Project is in downtown Spring Valley, NY. Preventing or lowering the flood risk will benefit an Environmental Justice community.		
Impact on Critical Facilities/Lifelines:	N/A		
Impact on Capabilities:	N/A		
Impact on Future Development:	N/A		

Climate Change Considerations:	Some erosion and flooding conditions may occur more frequently as a result of climate change; therefore, this project will help reduce the impacts of failing streambanks.		
Priority:	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action	Evaluation	
	No action	Current problem continues	
	Elevate roadways	Costly and may not solve problem	
	Buyout homes	Costly, negative social impacts	

Action 2024-Rockland County-08. Large Capacity Dump Trailer

Action Name:	Large Capacity Dump Trailer		
Description of the Problem:	The County has large debris removals that need to be performed after natural hazard events and it can be a very labor intensive and money intensive process. Some hazard events such as severe storms, fires and earthquakes can lead to a buildup of debris that has the potential to clog or dam waterbodies, leading to increased flood hazards.		
Hazard(s) of Concern:	<input checked="" type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire	
Description of the Solution:	The County will purchase a large dump trailer, which will allow more material to be removed in less trips. This will also reduce the number of trucks needed for debris removal at each location, and will also reduce the amount of time and money needed to complete debris removal.		
Lead Agency:	Rockland County Highway Department		
Supporting Agencies:	N/A		
Estimated Cost:	Medium (\$80,000)		
Potential Funding Sources:	County Budget, FEMA Emergency Management Performance Grants		
Implementation Timeline:	Short-term (Two to three years)		
Goals Met:	2, 5		
Benefits:	This action will improve response time and assist with debris removal after hazard events		
Mitigation Action Type:	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category:	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	N/A		
Impact on Critical Facilities/Lifelines:	Allows emergency routes to remain accessible and free from debris; providing continuity of operations during response and recovery		
Impact on Capabilities:	N/A		
Impact on Future Development:	N/A		
Climate Change Considerations:	N/A		
Priority:	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action	Evaluation	

	No action	Current problem continues
	Initiate shared services agreements with neighboring counties	Not feasible as other counties may need the equipment themselves; equipment may not always be available
	Contract outside contractors	Can be costly and may have limited availability during and after events

Action 2024-Rockland County-09. Portable Pumps

Action Name:	Portable Pumps	
Description of the Problem:	The County does not have equipment to help clear roadways during flood events, which is an issue that is becoming more and more frequent with an increase intensity and frequency of precipitation events. Flooded roads may negatively impact the transportation of emergency responders.	
Hazard(s) of Concern:	<input checked="" type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Town will purchase 4 portable 6-inch pumps along with hoses and accessories to clear flooded roads. The pumps will be used in various locations throughout the County to allow draining of roads inundated by floodwaters to ensure access for emergency responders	
Lead Agency:	Rockland County Highway Department	
Supporting Agencies:	N/A	
Estimated Cost:	High (\$100,000)	
Potential Funding Sources:	County Budget, FEMA HMGP	
Implementation Timeline:	Short-term (Two to three years)	
Goals Met:	1, 2	
Benefits:	This action promotes risk reduction; continuity of operations; access to critical facilities and community lifelines.	
Mitigation Action Type:	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category:	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Keeps roadways accessible to emergency personnel and residents	
Impact on Critical Facilities/Lifelines:	Keeps roadways accessible to emergency personnel and residents	
Impact on Capabilities:	N/A	
Impact on Future Development:	N/A	
Climate Change Considerations:	N/A	
Priority:	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No action	Current problem continues
	Install permanent floodwalls	Not feasible as it is not a portable solution

	Elevate all floodprone roadways in the County	Not feasible and costly; the County does not have jurisdiction over some roads
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Action 2024-Rockland County-010. Temporary Traffic Signals

Action Name:	Temporary Traffic Signals	
Description of the Problem:	Natural disasters such as earthquakes, floods, dam/levee failures, landslides, severe storms, winter storms and wildfires may lead to road closures and necessary detours. During these disasters, road closures and/or power outages affect traffic flow. Detours and barricades are used for temporary closures; however, road closures may extend beyond the event until repairs can be made, and emergency signage is needed to alert the public and emergency responders of traffic issues.	
Hazard(s) of Concern:	<input checked="" type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	The County will purchase temporary traffic signals in various languages that can be used to direct traffic during road closures or used when traffic signals are damaged so that socially vulnerable populations that do not speak English can understand the signs.	
Lead Agency:	Rockland County Highway Department	
Supporting Agencies:	N/A	
Estimated Cost:	High (\$300,000)	
Potential Funding Sources:	FEMA HMGP, County Budget	
Implementation Timeline:	Short-term (Four to five years)	
Goals Met:	1, 2	
Benefits:	This action promotes risk reduction and continuity of operations.	
Mitigation Action Type:	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category:	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	This action aims to provide emergency signage that can be interpreted by those that do not speak English.	
Impact on Critical Facilities/Lifelines:	Maintains control of intersections and detours during storm events.	
Impact on Capabilities:	N/A	
Impact on Future Development:	N/A	
Climate Change Considerations:	N/A	
Priority:	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium
Alternatives		<input type="checkbox"/> Low
	Action	Evaluation
	No action	Current problem continues
	Install generators at each traffic light	Not a portable option; the County will still need someone to guide traffic
	Utilize staff to direct traffic	Not feasible; restricts availability of staff to assist with response and recovery

Action 2024-Rockland County-011. Sustainability Coordinator for Rockland County

Action Name:	Sustainability Coordinator for Rockland County	
Description of the Problem:	While the County focuses on completing projects that will ensure a more sustainable and resilient Rockland County, the County does not have a person responsible for coordinating sustainability efforts throughout Rockland County. This means that the County does not develop actions that consider long-term risks or impacts due to climate change from dam/levee failures, droughts, earthquakes, extreme temperatures, floods, landslides, severe storms, severe winter storms, and wildfires.	
Hazard(s) of Concern:	<input checked="" type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	<p>Rockland County Department of Planning will select and hire a person to serve as the Sustainability Coordinator for Rockland County. Responsibilities include:</p> <ul style="list-style-type: none"> • Implementing and overseeing the County’s Sustainability Program by developing goals, actions, strategies and providing leadership for the County’s participation and involvement in federal and New York State sustainability programs such as the Climate Smart Communities (CSC) and Clean Energy Communities (CEC) programs; • Coordinate with County departments to implement, collect and submit documentation required to achieve CSC certification and CEC designation; • Coordinate the preparation of a Greenhouse Gas (GHG) Inventory and a Climate Action Plan (CAP), regularly reviewing and updating the CAP; • Assist in the creation of a (CSC) Task Force by organizing and helping to facilitate Task Force meetings to discuss progress, provide recommendations and strategies, prepare agendas and meeting minutes; • Develop, draft, and recommend regulatory action, policies and procedures related to sustainability initiatives; • Identify grant funding opportunities, complete and submit grant applications, administer and manage grants needed to implement the sustainability programs; • Prepare timely responses to requests for information from the public, advisory board members, and committees, appointed and elected government officials; • Develop and participates in studies involving research, investigation, and analysis of sustainability initiatives, including but not limited to, energy and water conservation, renewable energy, greenhouse gas emissions reduction, land use and smart growth, transportation, materials management, climate justice and disadvantaged communities, and climate adaptation and resiliency planning, etc.; • Participate in other County planning efforts (i.e., Comprehensive Plan, Multi-jurisdictional Hazard Mitigation Plan, Corridor Studies, Water Conservation Plan, Economic Development Plans, Housing Plans) to ensure coordination with the County Sustainability Program. <p>This position would help develop projects that lessen the impacts of climate-influenced hazards by integrating climate projections and considerations into the development of projects.</p>	
Lead Agency:	Rockland County Department of Planning	
Supporting Agencies:	Rockland County Division of Environmental Resources, Rockland County Legislature	
Estimated Cost:	Low (Staff time)	
Potential Funding Sources:	County Budget	
Implementation Timeline:	Short-term (Within 2 years)	
Goals Met:	1, 2, 3, 4, 5, 6, 7	

Benefits:	Someone to oversee the County’s sustainability program and assist the County with implementing the program and providing services to the different county departments		
Mitigation Action Type:	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category:	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	N/A		
Impact on Critical Facilities/Lifelines:	N/A		
Impact on Capabilities:	This action will provide additional capabilities to Rockland County and supports sustainability efforts across the County.		
Impact on Future Development:	N/A		
Climate Change Considerations:	The sustainability coordinator will review and factor in climate change information into plans, programs, and other initiatives.		
Priority:	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action	Evaluation	
	No action	Current problem continues	
	Hire an environmental consultant to provide these services	Not a full-time county employee and may not be fully available	
	Have current staff take on these roles/responsibilities	Not feasible as department staff have responsibilities and requirements; additional roles/responsibilities will increase workload and they cannot focus on the sustainability aspect	

Action 2024-Rockland County-012. Replacement of West Washington Avenue Bridge over Pascack Brook

Action Name:	Replacement of West Washington Avenue Bridge over Pascack Brook		
Description of the Problem:	The West Washington Avenue Bridge, which carries County Route 30 over the Pascack Brook has outlived its useful service life and needs replacement. The roadway approaches are sharp turns on steep grades and are difficult to navigate during adverse weather conditions. The channel alignment of Pascack Brook in relation to West Washington Avenue in the vicinity of the bridge results in embankment scour and roadway flooding during extreme storm events.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The project will replace the bridge with a new structure having improved hydraulic capacity, alignment, and scour resistance. The new structure will be upstream of the existing bridge with the stream channel adjusted to improve its alignment with the structure and eliminate or minimize the potential for embankment and foundation scour. The bridge will be designed to accommodate all legal loads. The project will realign the approach roadways between Old Pascack Road and Highland Avenue to improve horizontal and vertical curves and consider replacement of drainage systems.		
Lead Agency:	Rockland County Highway Department		
Supporting Agencies:	Town Highway Department		

Estimated Cost:	High (\$3,000,000)	
Potential Funding Sources:	FEMA HMGP, Federal, State	
Implementation Timeline:	Requests for proposals issued late 2023. Construction expected to begin early 2024.	
Goals Met:	1, 2	
Benefits:	This action will replace the existing bridge, including upgrading drainage systems and realigning channels, so that the roadway will be accessible for evacuations, travel, and emergency response during heavy precipitation and severe storm events.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Not applicable	
Impact on Critical Facilities/Lifelines:	This action will identify measures to protect infrastructure in the transportation lifeline, which will lead to the assurance of clear roadways for evacuations, regular travel, and emergency responses.	
Impact on Capabilities	Not applicable	
Impact on Future Development:	Future development in the surrounding area will be less likely to experience damage from flooding and to be isolated due to an impassable bridge.	
Climate Change Considerations:	A warmer atmosphere means more intense precipitation events and storms, which elevates the risk for overtopping.	
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No action	Severity of access problem continues, failure potential increases
	Remove the structure	Eliminates critical travel route, likely low political and public support
	Replace structure with current alignment	Current access problems continue

Action 2024-Rockland County-13. Emergency Notifications for Residents with Accessibility Issues

Action Name:	Emergency Notifications for Residents with Accessibility Issues	
Description of the Problem:	The County has socially vulnerable populations that have accessibility issues in terms of access to emergency notifications.	
Hazard(s) of Concern:	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	The County will perform an assessment of needs to mitigate situation at hand and emergency communication accessibility. The County will ensure that emergency notifications are located in areas where socially vulnerable populations are present.	

Lead Agency:	Office for People with Disabilities	
Supporting Agencies:	Office of Emergency Management	
Estimated Cost:	Medium (\$15,000 to \$20,000)	
Potential Funding Sources:	Rockland County, NY State, Community Development Block Group (CDBG) BRIC (through FEMA)	
Implementation Timeline:	Short-term (Two years)	
Goals Met:	1, 3, and 5	
Benefits:	The County will reduce the risk & costs to first responders in the County by reducing the potential for dangerous rescue operations.	
Mitigation Action Type:	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category:	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	It is specifically targeting socially vulnerable populations because we are concentrating on this population.	
Impact on Critical Facilities/Lifelines:	Accessibility to evacuation routes and shelters, as well as other necessary services as needed.	
Impact on Capabilities	Improvement of local capabilities because it improves accessibility awareness & preparedness.	
Impact on Future Development:	N/A	
Climate Change Considerations:	N/A	
Priority:	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No action	Current problem continues
	Door-to-door notification program	Not feasible due to the number of staff needed to support this effort
	Mass notification system for vulnerable populations	Not all residents have ways to receive mass notifications

Action 2024-Rockland County-14. Critical Facilities in the Floodplain

Action Name:	2024- Rockland County-14. Critical Facilities in the Floodplain	
Description of the Problem:	The following critical facilities are located floodplain and identified as vulnerable to the flood, dam failure, and severe storm hazards: Rockland Print County Dam and Rockland Print County Dam #2. The latter of these dam is noted as a significant hazard. Both dams are owned by the Rockland County Drainage Agency.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire

Description of the Solution:	The Drainage Agency will evaluate the need for potential mitigation projects to protect the dams to the 500-year flood or worst-case scenario. Potential feasible projects may include the following: elevations, dry floodproofing, backup power supply, retrofits, or relocation. The private owners will need to determine the most cost effective and feasible mitigation action for these facilities.		
Lead Agency:	Rockland County Drainage Agency		
Supporting Agencies:	Rockland County OFES		
Estimated Cost:	Low (< \$10,000)		
Potential Funding Sources:	Town Operating Budget		
Implementation Timeline:	Short-term (< 5 years)		
Goals Met:	2		
Benefits:	Low (> \$10,000)		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR)	<input type="checkbox"/> Natural Systems Protection (NSP)	<input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
	<input type="checkbox"/> Structure and Infrastructure Project (SIP)		
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR)	<input type="checkbox"/> Natural Resource Protection (NR)	<input type="checkbox"/> Structural Flood Control Projects (SP)
	<input type="checkbox"/> Property Protection (PP)	<input type="checkbox"/> Emergency Services (ES)	
	<input checked="" type="checkbox"/> Public Information (PI)		
Impact on Socially Vulnerable Populations:	N/A		
Impact on Critical Facilities/Lifelines:	This project aims to ensure the ability of the dams to continue functioning during severe storms so as not to lead to additional flooding.		
Impact on Capabilities:	N/A		
Impact on Future Development:	This project can help mitigate potential damage in the inundation areas.		
Climate Change Considerations:	N/A		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Problem persists
	Town completes mitigation actions in inundation areas		Does not reduce or eliminate risk

SECTION 9. JURISDICTIONAL ANNEXES

9.2 VILLAGE OF AIRMONT

This jurisdictional annex to the Rockland County Hazard Mitigation Plan (HMP) provides information to assist public and private sectors in the Village of Airmont with reducing losses from future hazard events. This annex is not guidance of what to do when a disaster occurs; its focus is on actions that can be implemented prior to a disaster to reduce or eliminate damage to property and people. The annex presents a general overview of Airmont, describes who participated in the planning process, assesses Airmont’s risk, vulnerability, and capabilities, and outlines a strategy for achieving a more resilient community.

9.2.1 Hazard Mitigation Planning Team

The Village of Airmont identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Village departments. The Village Engineer represented the community on the Rockland County HMP Planning Partnership and Steering Committee and supported the local planning process by securing input from persons with specific knowledge to enhance the plan. All departments were asked to contribute to the annex development through reviewing and contributing to the capability assessment, reporting on the status of previously identified actions, and participating in action identification and prioritization.

Table 9.2-1 summarizes Village officials that participated in the development of the annex and in what capacity. Additional documentation on the Village’s planning process through Planning Partnership meetings is included in Volume I, Section 3 (Planning Process) and Appendix C (Meeting Documentation).

Table 9.2-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: John Queenan, P.E., Village Engineer Address: Lanc & Tully P.C., 3132 NY-207, Campbell Hall, NY 10916 Phone Number: (845) 294-3700 Email: jq@lanctully.com	Name/Title: Beth Ricker, Administrative Assistant Address: Lanc & Tully P.C., 3132 NY-207, Campbell Hall, NY 10916 Phone Number: (845) 294-3700 Email: bmr@lanctully.com
National Flood Insurance Program Floodplain Administrator	
Name/Title: Louis Zummo, Building Inspector Address: 251 Cherry Lane, Airmont, NY 10952 Phone Number: (845) 414-5522 Email: buildinspector@airmont.org	

9.2.2 Municipal Profile

The Village of Airmont, located in Rockland County, is about 14 miles from the Tappan Zee Bridge and 30 miles northwest of New York City. It is approximately five square miles in size. The Village is bordered to the north by the Town of Ramapo, to the south by New Jersey, to the east by the Village of Chestnut Ridge, and to the west by the Village of Suffern.

Research has shown that some populations are at greater risk from hazard events because of decreased resources or physical abilities. These populations can be more susceptible to hazard events based on a number of factors

including their physical and financial ability to react or respond during a hazard, and the location and construction quality of their housing. Data from the 2017-2021 American Community Survey indicates that 6.6 percent of the population is five years of age or younger 14.9 percent is 65 years of age or older, 3.6 percent is non-English speaking, 10.7 percent is below the poverty threshold, and 7.3 percent is considered disabled.

9.2.3 Jurisdictional Capability Assessment and Integration

The Village of Airmont performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Volume I describes the components included in the capability assessment and their significance for hazard mitigation planning. The jurisdictional assessment for this annex includes analyses of the following:

- Planning and regulatory capabilities
- Development and permitting capabilities
- Administrative and technical capabilities
- Fiscal capabilities
- Education and outreach capabilities
- Classification under various community mitigation programs
- Adaptive capacity to withstand hazard events

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into day-to-day local government operations. As part of the hazard mitigation analysis, planning and /policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress toward plan integration. Development of an updated mitigation strategy provided an opportunity for the Village of Airmont to identify opportunities for integration of mitigation concepts that can be incorporated into Village procedures.

Planning, Legal, and Regulatory Capability and Integration

Table 9.2-2 summarizes the regulatory tools that are available to Village of Airmont.

Table 9.2-2. Planning, Legal, and Regulatory Capability and Integration

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Codes, Ordinances, & Regulations				
Building Code	Yes	Chapter 80 – Building Construction and Fire Prevention Chapter 89 – Uniform Construction Codes	State, Local	Code Enforcement
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Building Code has provisions to strengthen and elevate construction to withstand hazard forces, meet those outlined in the NFIP, and include development standards for withstanding storm surge, wind damage, earthquakes, and other hazards.				
Zoning/Land Use Code	Yes	Chapter 210 – Zoning, 1997	Local	Zoning Board of Appeals
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Zoning Code has provisions for stormwater control and requirements related to development in the floodplain.				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Subdivision Code	Yes	Chapter 180 – Subdivision of Land, 1993	Local	Zoning Board of Appeals
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Land to be subdivided shall be of such character that it can be used safely for building purposes without danger to health, or peril from fire, flood or other menace, and land shall not be subdivided until available municipal services, facilities and improvements exist and proper provision has been made for drainage, water, sewerage and capital improvements such as schools, transportation, parks and other needed improvements. The code has provisions for erosion and sediment control and development in the floodplains and wetlands.				
Site Plan Code	Yes	Chapter 164 – Site Development Plan Regulations, 1997	Local	Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Any development other than a one-family detached residence on a single lot or additions thereto require site development plan approval. The code requires that adequate lighting in provided to ensure safe movement of persons and vehicles and for security purposes, which is important during emergency responses, evacuations, and hazard events.				
Stormwater Management Code	Yes	Chapter 164 – Site Development Plan Regulations, Section 7.1 – Stormwater Management, 1997	Local	Village Engineer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The code aims to minimize increases in stormwater runoff from land development activities in order to reduce flooding, siltation, increases in stream temperature, and streambank erosion and maintain the integrity of stream channels.				
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Real Estate Disclosure Requirements	Yes	New York State (NYS) mandate, Property Condition Disclosure Act, NY Code – Article 14 §460-467	State and local	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The NYS mandate requires sellers to disclose to potential buyers whether their property is located in a designated floodplain.				
Growth Management	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Environmental Protection Ordinance(s)	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Flood Damage Prevention Ordinance	Yes	Chapter 114 – Flood Damage Prevention, 2004	Federal, State, Local	Village Engineer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> This chapter promotes the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by provisions designed to regulate uses which are dangerous to health, safety and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities.				
Wellhead Protection	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Emergency Management Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Climate Change Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other: Freeboard	Yes	State Code	State, Local	Village Engineer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> State mandated BFE+2 for single and two-family residential construction, BFE+1 for all other construction types.				
Other: Cumulative Substantial Damage	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Planning Documents				
General/Comprehensive Plan	Yes	Master Plan, adopted 2011	Local	Board of Trustees, Planning and Zoning Board, Engineer (Committee has been formed to conduct the updates)
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Village has several surface water sources that are incorporated into its build-out analysis. The Plan considers development in the floodplains and wetlands, as well as other environmental conditions.				
Capital Improvement Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Disaster Debris Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Floodplain Management or Watershed Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Stormwater Management Plan	No	-	Local	Planning and Zoning Clerk
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Open Space Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Urban Water Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Habitat Conservation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Economic Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Community Wildfire Protection Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Community Forest Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Transportation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Agriculture Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Climate Action/ Resiliency/Sustainability Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Tourism Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Business/ Downtown Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other (for example NYRCR, etc.)	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Response/Recovery Planning				
Emergency Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Continuity of Operations Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Substantial Damage Response Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Threat & Hazard Identification & Risk Assessment	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Post-Disaster Recovery Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Public Health Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

Development and Permitting Capability

Table 9.2-3 summarizes the capabilities of Village of Airmont to oversee and track development.

Table 9.2-3. Development and Permitting Capability

Indicate if your jurisdiction implements the following	Yes/No	Comment:
Do you issue development permits? <ul style="list-style-type: none"> If you issue development permits, what department is responsible? If you do not issue development permits, what is your process for tracking new development? 	Yes	Building Department
Are permits tracked by hazard area? (For example, floodplain development permits.)	No	-
Do you have a buildable land inventory? <ul style="list-style-type: none"> If you have a buildable land inventory, please describe 	No	-
Describe the level of build-out in your jurisdiction.	N/A	-

Administrative and Technical Capability

Table 9.2-4 summarizes potential staff and personnel resources available to Village of Airmont and their current responsibilities that contribute to hazard mitigation.

Table 9.2-4. Administrative and Technical Capabilities

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
<i>Administrative Capability</i>		
Planning Board	Yes	The Planning Board is responsible for reviewing all site plans and subdivision applications in the Village to ensure consistency with the Village’s approved land use plan. The Board’s review includes matters such as lighting, parking, drainage, traffic flow, and plantings. Its goal is to apply sound and consistent community planning principles to ensure responsible development.

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
Zoning Board of Adjustment	Yes	The Zoning Board of Appeals hears all requests for variances from the Airmont Zoning Code as well as requests for special permits under those regulations. Members of the Board make on-site inspections to assist in evaluation of all applications, including issues of hardship, character of the neighborhood, change of use, etc., and follow specific guidelines in making their determinations.
Planning Department	No	-
Mitigation Planning Committee	No	Planning Board or Village Engineer addresses mitigation as needed
Environmental Board/Commission	No	-
Open Space Board/Committee	Yes	Preservation and Open Space Committee
Economic Development Commission/Committee	No	-
Public Works/Highway Department	No	-
Construction/Building/Code Enforcement Department	Yes	Building Department
Emergency Management/Public Safety Department	No	-
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	Yes	Maintenance as part of contracts for DPW services; stream and culvert inspections take place before storm events and debris removal as needed
Mutual aid agreements	Yes	The State developed an Inter-municipal Mutual Aid Plan – parameters are listed in which a municipality can receive assistance; The Village has an Intermunicipal Agreement for Vehicle Repair and Maintenance with the Village of Suffern
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	-	-
Other	-	-
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Terner Miller Group (contractor)
Engineers or professionals trained in building or infrastructure construction practices	Yes	Brooker Engineering (contractor)
Planners or engineers with an understanding of natural hazards	Yes	Brooker Engineering
Staff with expertise or training in benefit/cost analysis	Yes	Brooker Engineering
Professionals trained in conducting damage assessments	Yes	Brooker Engineering
Personnel skilled or trained in GIS and/or Hazus applications	No	The Village relies on Rockland County GIS and receives training on utilization of their system; Village staff received training for GIS earlier 2016
Environmental scientist familiar with natural hazards	Yes	Brooker Engineering
Surveyor(s)	Yes	Brooker Engineering
Emergency Manager	Yes	Mayor
Grant writer(s)	Yes	Consultant (Sylvia Welch)

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
Resilience Officer	-	-
Other (this could include stormwater engineer, environmental specialist, etc.)	-	-

Fiscal Capability

Table 9.2-5 summarizes financial resources available to Village of Airmont.

Table 9.2-5. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use? (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	Yes in past; no longer qualify
Capital improvements project funding	Yes (through Assemblywoman each year)
Authority to levy taxes for specific purposes	Yes – for property maintenance; inspections that have not been paid
User fees for water, sewer, gas or electric service	Yes – hookup fees for water and gas; Sewer is from the Town
Impact fees for homebuyers or developers of new development/homes	Yes – open space contribution for new development (money or open space)
Stormwater utility fee	Yes – for new development
Incur debt through general obligation bonds	Yes - Capital improvement bonds (road projects)
Incur debt through special tax bonds	No
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	No
Other federal or state Funding Programs	Capital improvement requests
Open Space Acquisition funding programs	No
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	-

Education and Outreach Capability

Table 9.2-6 summarizes the education and outreach resources available to Village of Airmont.

Table 9.2-6. Education and Outreach Capabilities

Outreach Resources	Available? (Yes/No)	Comment:
Public information officer or communications office	No	-
Personnel skilled or trained in website development	No	-
Hazard mitigation information available on your website	No	-
Social media for hazard mitigation education and outreach	Yes	Facebook
Citizen boards or commissions that address issues related to hazard mitigation	No	-

Outreach Resources	Available? (Yes/No)	Comment:
Warning systems for hazard events	Yes	Rockland County has two alert notification systems (CodeRED and NYAlert) that the County manages and are accessible to the municipalities to send out messages. National Weather Service also sends out tornado, high wind, and flooding alerts regarding forecasted weather. The Village utilizes these systems and also sends out email blasts to residents as needed as well.
Natural disaster/safety programs in place for schools	No	-
Organizations that conduct outreach to socially vulnerable populations and underserved populations	No	-
Public outreach mechanisms / programs to inform citizens on natural hazards, risk, and ways to protect themselves during such events	Yes	Can use village social media outlets to share information

Community Classifications

Table 9.2-7 summarizes classifications for community programs available to Village of Airmont.

Table 9.2-7. Community Classifications

Program	Participating? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	No	-	-
New York State Department of Environmental Conservation (NYSDEC) Climate Smart Community	No	-	-
National Weather Service Storm Ready Certification	No	-	-
Firewise Communities classification	No	-	-
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable

— = Unavailable

Adaptive Capacity

Adaptive capacity is defined as “the ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or respond to consequences” (IPCC, 2022). Each jurisdiction has a unique combination of capabilities to adjust to, protect from, and withstand a future hazard event, future conditions, and changing risk. Table 9.2-8 summarizes the adaptive capacity for each identified hazard of concern and the Village’s capability to address related actions using the following classifications:

- Strong: Capacity exists and is in use.
- Moderate: Capacity might exist; but is not used or could use some improvement.
- Weak: Capacity does not exist or could use substantial improvement.

Table 9.2-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Disease Outbreak	Moderate
Drought	Moderate
Earthquake	Moderate
Extreme Temperature	Moderate
Flood	Moderate
Landslide	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

9.2.4 National Flood Insurance Program Compliance

This section provides specific information on the management and regulation of the regulatory floodplain, including current and future compliance with the National Flood Insurance Program (NFIP). The floodplain administrator listed in Table 9.2-1 is responsible for maintaining this information.

NFIP Summary

Table 9.2-9 summarizes the NFIP statistics for Village of Airmont.

Table 9.2-9. Village of Airmont NFIP Summary of Policy and Claim Statistics

# Policies	2
# Claims (Losses)	2
Total Loss Payments	\$17,742
# Repetitive Loss Properties (NFIP definition)	0
# Repetitive Loss Properties (FMA definition)	0
# Severe Repetitive Loss Properties	0
# Policies Within the 1 percent Annual Chance Flood Boundary	0

NFIP Definition of Repetitive Loss: The NFIP defines a repetitive loss property as any insurable building for which two or more claims of more than \$1,000 were paid by the NFIP within any rolling 10-year period since 1978.

FMA Definition of Repetitive Loss: FEMA’s Flood Mitigation Assistance (FMA) program defines a repetitive loss property as any insurable building that has incurred flood-related damage on two occasions, in which the cost of the repair, on average, equaled or exceeded 25 percent of the market value of the structure at the time of each such flood event.

Definition of Severe Repetitive Loss: A residential property covered under an NFIP flood insurance policy and: (a) That has at least four NFIP claim payments over \$5,000 each, and the cumulative amount of such claims payments exceeds \$20,000; or (b) For which at least two separate claims payments have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building. At least two of the claims must have occurred within any 10-year period, more than 10 days apart.

Source: FEMA, December 2023

Note: RL count may include properties also identified as SRL.

Flood Vulnerability Summary

Table 9.2-10 provides a summary of the NFIP program in Village of Airmont.

Table 9.2-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	Brookside Avenue has experienced extensive and repeated flooding during heavy rain events because the culvert is undersized and deteriorated. The open drainage channel along Laura Drive, which is a Village-owned road and drainage easement, has deteriorated badly as a result of flooding during Hurricane Irene, Tropical Storm Lee and Super Storm Sandy. The intersection at South Monsey Road also is known to flood.
Do you maintain a list of properties that have been damaged by flooding?	No
Do you maintain a list of property owners interested in flood mitigation?	No
How many homeowners and/or business owners are interested in mitigation (elevation or acquisition)?	Unknown
Are any RiskMAP projects currently underway in your jurisdiction? <ul style="list-style-type: none"> If so, state what projects are underway. 	No
How do you make Substantial Damage determinations?	The Village does not have a Cumulative Substantial Damages ordinance.*
How many were declared for recent flood events in your jurisdiction?	None
How many properties have been mitigated (elevation or acquisition) in your jurisdiction? <ul style="list-style-type: none"> If there are mitigation properties, how were the projects funded? 	Unknown
Do your flood hazard maps adequately address the flood risk within your jurisdiction? <ul style="list-style-type: none"> If not, state why. 	Unknown
NFIP Compliance	
What local department is responsible for floodplain management?	Building Department
Are any certified floodplain managers on staff in your jurisdiction?	Yes, contracted
Do you have access to resources to determine possible future flooding conditions from climate change?	No
Does your floodplain management staff need any assistance or training to support its floodplain management program? <ul style="list-style-type: none"> If so, what type of assistance/training is needed? 	No
Provide an explanation of NFIP administration services you provide (e.g., permit review, GIS, education/outreach, inspections, engineering capability)	Permit review, GIS training, engineering contracted support
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	The Village Engineer reviews floodplain development permits to determine if it qualifies.
What are the barriers to running an effective NFIP program in the community, if any?	Unknown
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? <ul style="list-style-type: none"> If so, state the violations. 	Unknown

NFIP Topic	Comments
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	April 26, 2017
What is the local law number or municipal code of your flood damage prevention ordinance?	Chapter 114 – Flood Damage Prevention
What is the date that your flood damage prevention ordinance was last amended?	2004
Does your floodplain management program meet or exceed minimum requirements? <ul style="list-style-type: none"> If exceeds, in what ways? 	Meets
Are there other local ordinances, plans or programs (e.g., site plan review) that support floodplain management and meeting the NFIP requirements? For instance, does the planning board or zoning board consider efforts to reduce flood risk when reviewing variances such as height restrictions?	The Village has code in place that requires 100-foot regulated area adjacent to all wetlands.
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	No. Due to low number of NFIP policies, it is not cost-effective to join.

*Note: *The Village reported it does not have a process to make substantial damage determinations; however, during this planning process, it was confirmed that substantial damage determination provisions are established in both the adopted NFIP ordinance and adopted building code. This response has not been changed to accurately reflect the tools leveraged by the Village to mitigate risks.*

9.2.5 Growth/Development Trends

Understanding how past, current, and projected development patterns have or are likely to increase or decrease risk in hazard areas is a key component to appreciating a jurisdiction’s overall risk to its hazards of concern. Recent and expected future development trends, including major residential/commercial development and major infrastructure development, are summarized in Table 9.2-11 through Table 9.2-13.

Table 9.2-11. Number of Building Permits for New Construction Issued Since the Previous HMP*

	New Construction Permits Issued			Total
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	
2019				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2020				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2021				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2022				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2023				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0

SFHA = Special Flood Hazard Area (1 percent flood event)

Table 9.2-12. Recent Major Development and Infrastructure from 2018 to Present

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
No major development or infrastructure reported.					

* Only location-specific hazard zones or vulnerabilities identified.

Table 9.2-13. Known or Anticipated Major Development and Infrastructure in the Next Five Years

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
No anticipated major development or infrastructure reported.					

* Only location-specific hazard zones or vulnerabilities identified.

9.2.6 Jurisdictional Risk Assessment

The hazard profiles in Volume I provide detailed information regarding each planning partner’s vulnerability to the identified hazards, including summaries of the Village of Airmont’s risk assessment results and data used to determine the hazard ranking. Key local risk assessment information is presented below.

Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Village are shown in Figure 9.2-1 through Figure 9.2-2. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps are provided only for hazards that can be identified clearly using mapping techniques and technologies and for which the Village of Airmont has significant exposure. The maps show the location of potential new development, where available.

Figure 9.2-1. Village of Airmont Flood and Dam Inundation Hazard Area Extent and Location

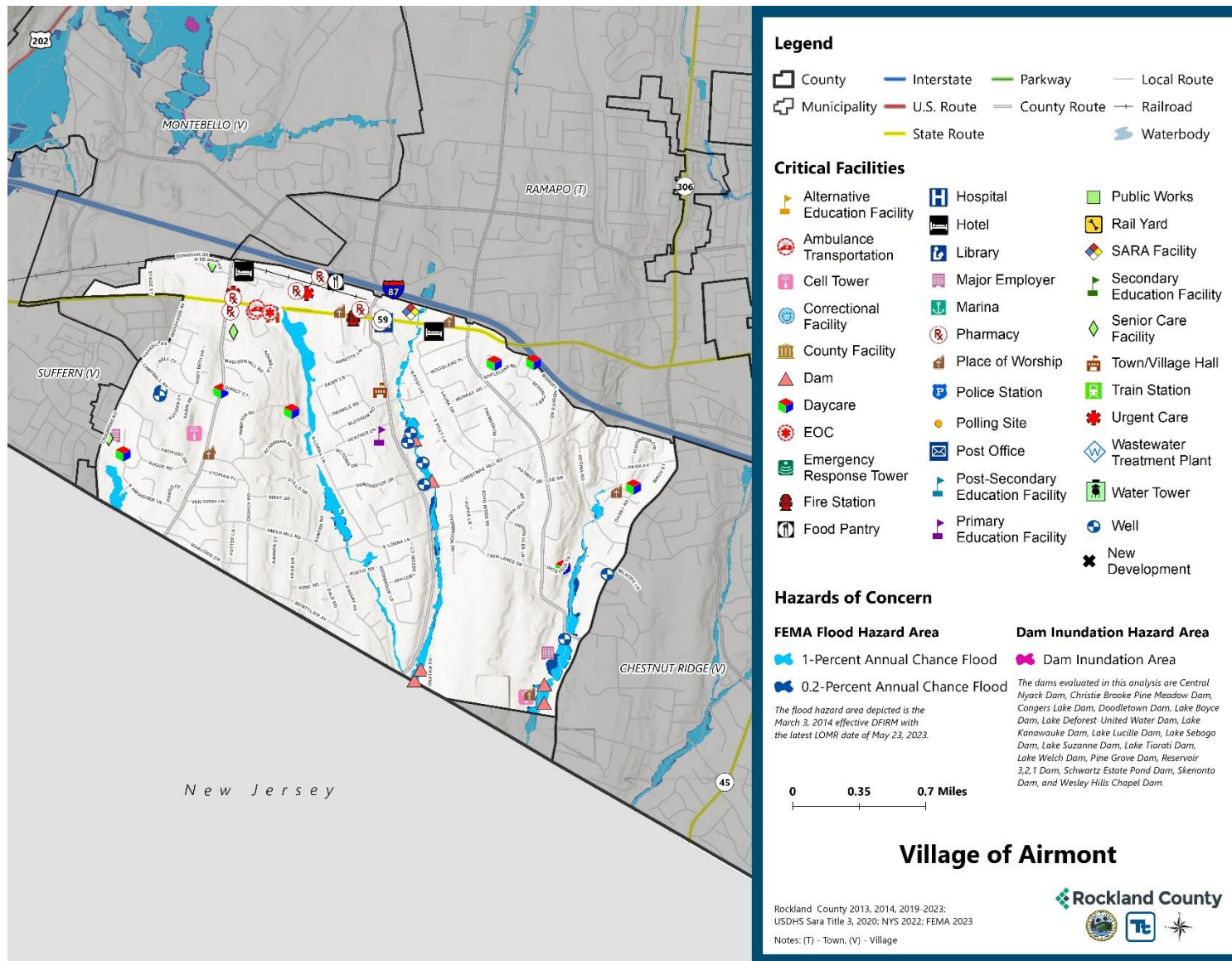
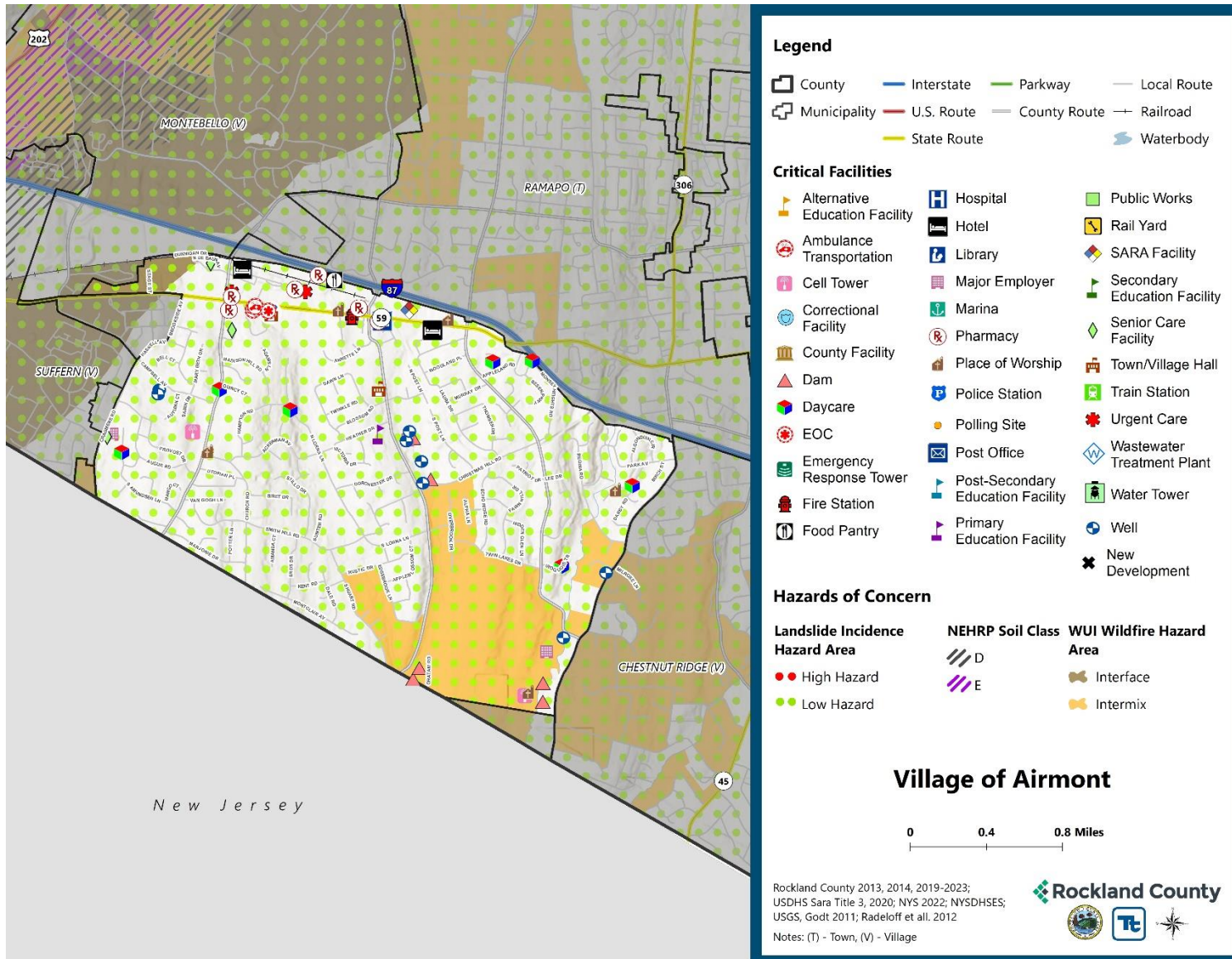


Figure 9.2-2. Village of Airmont Landslide, Earthquake, and Wildfire Hazard Area Extent and Location



Hazard Event History

The history of natural and non-natural hazard events in the Village of Airmont is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 2-14 provides details on loss and damage in the Village of Airmont during hazard events since the last hazard mitigation plan update.

Table 9.2-14. Hazard Event History in the Village of Airmont

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Summary of Damage and Losses in the Village
March 2019	High Winds	No	Brush removal from windstorm	-
November 2019	Severe Storm	No	Removal of debris due to storm damage	-
January 20, 2020 - May 11, 2023	New York Covid-19 (3434-EM-NY, 4480-DR-NY)	Yes	The Covid-19 pandemic resulted in nationwide shutdowns, social distancing and masking requirements, and immunization efforts. Since the start of the pandemic, roughly 950 deaths have been reported in Rockland County. The federal Public Health Emergency expired in May 2023 but illness continues to occur as the virus shifts to becoming endemic.	-
April 13, 2020	High Winds	No	High winds across the county led to downed trees, power outages, closed roads,	\$200,000 in property damage
August 4, 2020	New York Tropical Storm Isaias (4567-DR-NY)	Yes	The center of Isaias passed about 65 miles west of New York City at 3 pm on August 4, 2020. Tropical storm force winds extended well east of the center of circulation. In addition, 1 to 3 inches of rainfall, highest west, were recorded across the county. These types of winds and rainfall across the area resulted in numerous trees and tree limbs being downed, power outages, damages to homes and automobiles, and disruption to transit.	-
August 21-24, 2021	New York Hurricane Henri (3565-EM-NY)	Yes	Rainfall from Tropical Storm Henri resulted in widespread flash flooding across southeastern New York, particularly portions of the Lower Hudson Valley. Rainfall totals generally ranged from 2-5 inches, with this rain coming in addition to the 2-5 inches that fell during the predecessor rainfall event the night before.	-

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Summary of Damage and Losses in the Village
September 1-3, 2021	New York Remnants of Hurricane Ida (3572-EM-NY, 4615-DR-NY)	Yes	Extremely heavy rainfall associated with the remnants of Hurricane Ida overspread southeast New York during the evening of September 1 and continued through the early morning hours of September 2. Rainfall totals ranged from 5-8 inches across much of the region, with much of that rain falling in just a few hours. This resulted in widespread catastrophic flash flooding.	Catch basin repair due to damages from Hurricane Ida
July 9-10, 2023	Severe Storm, Flooding	No	Severe storms and flooding resulted in road closures, including portions of the Palisades Interstate Parkway, throughout Rockland County.	-

EM = Emergency Declaration (FEMA)
 FEMA = Federal Emergency Management Agency
 DR = Major Disaster Declaration (FEMA)
 N/A = Not applicable

Hazard Ranking and Vulnerabilities

The hazard profiles in Volume I have detailed information regarding each planning partner’s vulnerability to the identified hazards. The following presents key risk assessment results for the Village of Airmont.

Hazard Ranking

The participating jurisdictions have differing degrees of vulnerability to the hazards of concern, so each jurisdiction ranked its own degree of risk to each hazard. The community-specific hazard ranking is based on problems and impacts identified by the risk assessment presented in Volume I. The ranking process involves an assessment of the likelihood of occurrence for each hazard; the potential impacts of the hazard on people, property, and the economy; community capabilities to address the hazard; and changing future climate conditions. The Village of Airmont reviewed the County hazard ranking and individual results to assess the relative risk of the hazards of concern to the community. During the review of the hazard ranking, the Village indicated the following:

- Flooding should be elevated from a Low rating to a Medium because stormwater flooding is much more frequent.

Table 9.2-15 shows Airmont’s final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 9.2-15. Hazard Ranking

Hazard	Rank
Dam Failure	Low
Disease Outbreak	Medium
Drought	Medium
Earthquake	Low

Hazard	Rank
Extreme Temperatures	Medium
Flood	Medium
Landslides	Low
Severe Weather	High
Severe Winter Weather	High
Wildfire	Low

Note: The scale is based on the hazard rankings established in Volume I, modified as appropriate based on review by the jurisdiction

Critical Facilities

Table 9.2-16 identifies critical facilities in the community located in the 1-percent and 0.2-percent annual chance floodplains.

Table 9.2-16. Critical Facilities Flood Vulnerability

Name	Type	Exposure		Addressed by Proposed Action	Already Protected to 0.2 percent Flood Level (describe protections)
		1 percent Event	0.2 percent Event		
Allabough Pond Dam	Dam	Yes	Yes	2024-Airmont-12	No
Island Lake Dam	Dam	Yes	Yes	2024-Airmont-12	No
Lulinsky Lake Dam	Dam	Yes	Yes	2024-Airmont-12	No
Mountain Lake Dam	Dam	Yes	Yes	2024-Airmont-12	No
200 Cherry Lane Dam	Dam	Yes	Yes	2024-Airmont-12	No
St. Patrick Cathedral Cemetery Dam	Dam	Yes	Yes	2024-Airmont-12	No
Ramapo Country Day Camp Well	Well	Yes	Yes	2024-Airmont-12	No
Scuffy Day Camp North Well	Well	Yes	Yes	2024-Airmont-12	No

Source: Rockland County 2023, FEMA

In addition to critical facilities that are exposed to flooding, there are no following high hazard dams located in the Village of Airmont.

Identified Issues

After review of the Village of Airmont’s hazard event history, hazard rankings, hazard location, and current capabilities, the Village identified the following vulnerabilities within the community:

- Erosion is occurring at Beaver Hollow which has led to increased flood events due to increased precipitation due to severe storms and severe winter storms. Bank stabilization due to erosion is needed at Beaver Hollow. The Village does not have an Emergency Response Plan to enforce during emergency events such as dam/levee Failure, disease outbreak, drought, earthquakes, extreme temperature, flood, landslide, severe storm, severe winter storm, and wildfire. The Village Hall does not provide information or guidance on the hazards that have historically impacted the Village such as dam/levee Failure, disease outbreak, drought, earthquakes, extreme temperature, flood, landslide, severe storm, severe winter storm, and wildfire. The Village’s codes are not stringent on illicit discharge and pumping of materials into waterbodies which negatively influences the water quality of the water in the Village. Severe storms,

winter storms and flood all impact the waterbodies in the Village. The culvert under Erie Railroad Row is undersized and contributes to area flooding due to an increase in intensity and frequency of severe storm and severe winter storm events.

- The master plan does not currently incorporate natural hazard areas in the zoning and development section such as dam/levee areas, flood zones (these are also impacted by severe storms and severe winter storms) and high landslide and wildfire susceptibility areas.
- The Village does not have access to MS4 data so that the Village can use the data for mapping. This would help to understand issues related to flooding from severe storms and severe winter storms. is not available online for use. There is a need for data and mapping of the MS4 program from village and towns in the County.
- The culvert on Brookside Avenue is deteriorating and under-sized, contributing to flooding in the area from an increase in precipitation events such as severe storms and severe winter storms.
- The Village has identified many roadways, specifically County owned roads, that repeatedly flood due to an increase in precipitation from severe storms and severe winter storms. Many roadways, in particular County roads, repeatedly flood.
- The Village-owned road 7 South Amundsen Lane has insufficient drainage, which leads to an increase in flooding events from an increase in precipitation events from severe storms and severe winter storms.
- The Village experiences flooding along Laura Drive and adjacent properties experience flooding during heavy rain events due to severe storms and severe winter storms.
- There are three potable wells and one pump station located in the floodplain in the Village and that are potentially vulnerable to flood events as identified during the Rockland County HMP update. The Village does not have jurisdiction over these facilities to mitigate.
- The Village is susceptible to downed trees, power outages and structural damages due to flood, severe storms, and severe winter storms. severe storms and weather from downed trees, powerlines, and structure damage.
- Village residents are not aware of the resources available to inform them on potential hazards and risks they face, including but not limited to dam/levee failure, disease outbreak, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, and wildfire.
- The municipality does not have a Substantial Damage Management Ordinance, nor do they have a standard process in place when conducting substantial damage determinations. The Village has substantial damage determination provisions in both the adopted NFIP ordinance and adopted building code, but staff are unaware of these provisions and do not leverage them.

9.2.7 Mitigation Strategy and Prioritization

This section discusses past mitigations actions from the previous HMP, describes proposed hazard mitigation actions, and prioritizes actions to address over the next five years.

Past Mitigation Initiative Status

Table 9.2-17 indicates progress on the Village’s mitigation strategy identified in the 2019 HMP. Actions that are still recommended but not completed or that are in progress are carried forward and combined with new actions as part of the mitigation strategy for this plan update. Previous actions that are now ongoing programs and capabilities are indicated as such and are presented in the capability assessment earlier in this annex.

Additional Mitigation Efforts

Since the adoption of the County’s first HMP, the Village of Airmont has made significant mitigation progress in the following areas:

- Stabilization studies and projects have been completed or undertaken for various tributaries and water bodies in the Village.

Table 9.2-17. Status of Previous Mitigation Actions

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
Airmont-1	Beaver Hollow Bank Erosion and Stabilization	Flood, Severe Storm, Nor'Easter	Village Engineer	Bank stabilization due to erosion is needed at Beaver Hollow. Conduct a study to see which methods are the most feasible to stabilize the bank. Implement the actions.	1. No Progress 2. N/A	1. Continue 2. No revisions 3. N/A
Airmont-2	Village Emergency Plan	All Hazards	Village Planner	The Village currently utilizes the Rockland County's Emergency Response Plan. Develop an individual Village Emergency Plan.	1. No Progress 2. N/A	1. Continue 2. No revisions 3. N/A
Airmont-3	Village Hall Display Rack	All Hazards	Rockland County Office of Fire and Emergency Services	The Village Hall does not have a display rack for informational brochures and guides. Obtain a new display rack for this information through the County.	1. No Progress 2. N/A	1. Include 2. N/A 3. N/A
Airmont-4	Saddle River Bank Stabilization and Headwall Replacement	Flood, Severe Storm, Nor'Easter	Village Engineer	Bank stabilization and headwall replacement is needed at various locations along the west branch of Saddle River and its tributary where erosion is taking place. Conduct a study to see which methods are the most feasible to stabilize the river bank. Implement the actions.	1. Complete 2. The Beaver Hollow Road Culvert has been repaired. Village went to bid for a private contractor to complete this work in 2018-2019	1. Completed 2. N/A 3. Project complete.

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
Airmont-5	Enhancement of Village Discharge Code	Flood, Severe Storm, Nor'Easter	Village Engineer and Planner	The Village's codes could be updated to become more stringent on illicit discharge and pumping of materials into waterbodies. As part of the Village's comprehensive review of their codes, enhance the illicit discharge section re: prohibiting dumping of vegetative and other debris into stream channels.	1. In Progress 2. N/A	1. Include 2. N/A 3. N/A
Airmont-6	Erie Railroad Row Drainage Improvements	Flood, Severe Storm, Nor'Easter	Village Engineer	The culvert under Erie Railroad Row is undersized and contributes to area flooding. Increase the capacity of the culvert located under Erie Railroad Row.	1. No Progress 2. N/A	1. Include 2. N/A 3. N/A
Airmont-7	Comprehensive Plan Update	All Hazards	Village Planner and Master Plan Update Committee	The Village currently does not refer to the HMP while updating planning documents. Include review of the mitigation plan and incorporate natural hazard zones in the zoning and development sections of the plan.	1. No Progress 2. N/A	1. Include 2. N/A 3. N/A

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
Airmont-8	MS4 Data Integration	Flood, Severe Storm, Nor'Easter	Village Engineer	MS4 data is not available online for use. Work with the Stormwater Consortium to integrate Village MS4 data into its GIS Map Portal.	1. In Progress 2. The Village is participating with the County for mapping of its stormwater system	1. Include 2. N/A 3. N/A
Airmont-9	Brookside Avenue Culvert Replacement	Flood, Severe Storm, Nor'Easter	Village Engineer	The culvert on Brookside Avenue is deteriorating and under-sized, contributing to flooding in the area. Replace the culvert with a new, adequately culvert to assist with flood mitigation measures.	1. No Progress 2. N/A	1. Include 2. N/A 3. N/A
Airmont-10	Flood-prone Roadways Mitigation Solutions	Flood, Severe Storm, Nor'Easter	County DPW; Village Mayor	Many roadways, in particular County roads, repeatedly flood. Develop specific mitigation solutions for floodprone road systems (roads, bridges, intersections, drainage, etc.) under the leadership of County DPW.	1. No Progress 2. N/A	1. Include 2. N/A 3. N/A
Airmont-11	South Amundsen Lane Drainage Resolution	Flood, Severe Storm, Nor'Easter	Village Engineer	South Amundsen Lane has insufficient drainage. Increase drainage on South Amundsen Lane to mitigate flooding.	1. No Progress 2. N/A	1. Include 2. N/A 3. N/A

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
Airmont-12	Laura Drive Drainage Improvements	Flood, Severe Storm, Nor'Easter	Village Engineer	<p>Laura Drive and the properties on the road experience flooding during heavy rain events.</p> <p>Improve the drainage channel along Laura Drive.</p>	<p>1. No Progress 2. N/A</p>	<p>1. Include 2. N/A 3. N/A</p>
Airmont-13	Critical Facilities in Floodplain	Flood	Village Engineer; Private Owners	<p>There are 3 potable wells and one pump station located in the floodplain in the Village and potentially vulnerable to flood events as identified during the Rockland County HMP update. The Village does not have jurisdiction over these facilities to mitigate.</p> <p>Notify the private potable-well and pump station owners regarding these critical facilities' flood vulnerability and NYS' requirement to protect to the 500-year flood or worst-case scenario. The Village will provide the owners information regarding grant options for funding to implement their mitigation.</p>	<p>1. No Progress 2. N/A</p>	<p>1. Include 2. N/A 3. N/A</p>

Proposed Hazard Mitigation Initiatives for the HMP Update

The Village of Airmont participated in the mitigation strategy workshop for this HMP to identify appropriate actions to include in a local hazard mitigation strategy. Its comprehensive consideration of all possible activities to address hazards of concern included review of the following FEMA documents:

- FEMA 551 “Selecting Appropriate Mitigation Measures for Floodprone Structures” (March 2007)
- FEMA “Mitigation Ideas—A Resource for Reducing Risk to Natural Hazards” (January 2013).

The action worksheets included at the end of this annex list the mitigation actions that the Village would like to pursue in the future to reduce the effects of hazards. The actions are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in Village priorities.

Table 9.2-18 indicates the range of proposed mitigation action categories. The four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table to further demonstrate the wide range of activities and mitigation measures selected.

Volume I identifies 14 evaluation criteria for prioritizing the mitigation actions. To assist with rating each mitigation action as high, medium, or low priority, a numeric rank is assigned (-1, 0, or 1) for each of the evaluation criteria. Table 2-19 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

The prioritization criteria provided in Volume I Section 6 (Mitigation Strategy) identify 14 evaluation/prioritization criteria to complete the prioritization of mitigation initiatives. For each new mitigation action, a numeric rank is assigned (-1, 0, or 1) for each of the 14 evaluation criteria to assist with prioritizing actions as high, medium, or low. Table 9.2-19 provides a summary of the prioritization of all proposed mitigation initiatives for the HMP update.

Table 9.2-18. Analysis of Mitigation Actions by Hazard and Category

Hazard	Actions That Address the Hazard, by Action Category									
	FEMA				CRS					
	LPR	SIP	NSP	EAP	PR	PP	PI	NR	SP	ES
Dam Failure	3	-	-	2	2	-	1	-	-	3
Disease Outbreak	2	-	-	2	1	-	1	-	-	2
Drought	3	-	-	2	2	-	1	-	-	3
Earthquake	3	-	-	2	2	-	1	-	-	3
Extreme Temperature	3	-	-	2	2	-	1	-	-	3
Flood	4	5	1	3	3	5	2	1	3	3
Landslide	3	-	-	2	2	-	1	-	-	3
Severe Weather	4	5	-	3	4	5	2	-	3	3
Severe Winter Weather	4	4	-	3	3	4	2	-	3	3
Wildfire	3	-	-	2	2	-	1	-	-	3

Local Plans and Regulations (LPR)—These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.

Structure and Infrastructure Project (SIP)—These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct structures to reduce the impact of hazards.

Natural Systems Protection (NSP)—These are actions that minimize damage and losses and preserve or restore the functions of natural systems.

Education and Awareness Programs (EAP)—These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities

Preventative Measures (PR)—Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.

Property Protection (PP)—These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.

Public Information (PI)—Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.

Natural Resource Protection (NR)—Actions that minimize hazard loss and preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.

Structural Flood Control Projects (SP)—Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.

Emergency Services (ES)—Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities.

Table 9.2-19. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Other Community Objectives	Total	High / Medium / Low
2024-Airmont-01	Beaver Hollow Stabilization Study	0	1	1	0	0	0	1	0	0	1	0	1	1	1	7	Medium
2024-Airmont-02	Emergency Response Plan	1	1	1	0	1	0	0	1	1	1	0	1	1	1	10	Medium
2024-Airmont-03	Village Hall Display Rack	1	1	1	1	1	1	0	1	1	1	0	1	1	1	12	High
2024-Airmont-04	Enhance Village Discharge Code	0	1	1	1	1	1	1	0	1	1	1	1	1	1	12	High
2024-Airmont-05	Erie Railroad Row Drainage Improvements	0	1	1	1	1	1	1	0	1	1	1	1	1	1	12	High
2024-Airmont-06	Comprehensive Plan Update	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	High
2024-Airmont-07	MS4 Data Integration	0	1	1	1	1	1	1	0	1	1	1	1	1	1	12	High
2024-Airmont-08	Brookside Avenue Culvert Replacement	1	1	1	1	1	0	1	0	1	1	1	1	1	1	12	High
2024-Airmont-09	Flood-prone Roadway Mitigation Solutions	1	1	1	0	0	0	1	1	1	1	1	1	1	1	11	High
2024-Airmont-10	South Amundsen Lane Drainage Resolution	1	1	1	1	1	0	1	1	1	1	1	1	1	1	13	High
2024-Airmont-11	Laura Drive Drainage Improvements	1	1	1	1	1	0	1	1	1	1	1	1	1	1	13	High
2024-Airmont-12	Critical Facilities in the Floodplain	1	1	1	0	0	0	1	0	0	0	1	1	1	0	7	Medium
2024-Airmont-13	Severe Storm Mitigation Maintenance	1	1	1	0	0	1	0	1	1	1	1	1	0	1	11	High
2024-Airmont-14	Village Outreach	1	1	1	0	1	1	1	1	1	1	1	1	1	0	12	High
2024-Airmont-15	Substantial Damage Determination Training and Resources	1	1	1	0	1	1	0	0	1	1	1	1	1	1	11	High

Note: Volume I, Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14).

Action 2024-Airmont-01. Beaver Hollow Stabilization Study

Action Name:	2024-Airmont-01. Beaver Hollow Stabilization Study		
Description of the Problem:	Erosion is occurring at Beaver Hollow which has led to increased flood events due to increased precipitation due to severe storms and severe winter storms.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The Village will conduct a study to see which methods are the most feasible and cost-effective to stabilize the bank and will implement those actions as well as conduct routine maintenance to ensure the integrity of the bank.		
Lead Agency:	Village Engineer		
Supporting Agencies:	Building Department		
Estimated Cost:	High (> \$100,000)		
Potential Funding Sources:	Federal, State, Local		
Implementation Timeline:	Short-term (< 5 years)		
Goals Met:	2, 4		
Benefits:	High (> \$100,000)		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input checked="" type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input checked="" type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	Socially vulnerable populations may disproportionately be impacted by flooding at the Beaver Hollow.		
Impact on Critical Facilities/Lifelines:	N/A		
Impact on Capabilities:	This action strengthens the Village capabilities to handle flood events.		
Impact on Future Development:	Future development near Beaver Hollow may be affected by future bank stabilization efforts.		
Climate Change Considerations:	Climate change is resulting an increase in frequency and intensity of precipitation events, making flooding more common and severe.		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem continues
	Reroute water body		Not feasible

Action 2024-Airmont-02. Emergency Response Plan

Action Name:	2024-Airmont-02. Emergency Response Plan		
Description of the Problem:	The Village does not have an Emergency Response Plan to enforce during emergency events such as dam/levee Failure, disease outbreak, drought, earthquakes, extreme temperature, flood, landslide, severe storm, severe winter storm, and wildfire.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire	
Description of the Solution:	The Village will develop an individual Village Emergency Plan that integrates the hazards of concern listed in the hazard mitigation plan.		
Lead Agency:	Village Planner		
Supporting Agencies:	Building Department		
Estimated Cost:	Medium (\$10,000 - \$100,000)		
Potential Funding Sources:	Local		
Implementation Timeline:	Short-term (< 5 years)		
Goals Met:	1, 2, 5, 7		
Benefits:	The Village will have an emergency plan developed to put in place during any emergency event that impacts the Village.		
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	This plan could identify and aim to close gaps in servicing the most vulnerable populations in the Village.		
Impact on Critical Facilities/Lifelines:	This plan will identify efficiencies and opportunities to leverage resources to ensure operability of critical facilities and lifelines.		
Impact on Capabilities:	This plan aims to improve the Village’s ability to prepare and respond to emergencies.		
Impact on Future Development:	N/A		
Climate Change Considerations:	Climate change is resulting in an increase in intensity and frequency of precipitation events.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem continues
	Partner with neighboring community on Emergency Plan		Increased time to complete, less specific to Airmont

Action 2024-Airmont-03. Village Hall Display Rack

Action Name:	2024-Airmont-03. Village Hall Display		
Description of the Problem:	The Village Hall does not provide information or guidance on the hazards that have historically impacted the Village such as dam/levee Failure, disease outbreak, drought, earthquakes, extreme temperature, flood, landslide, severe storm, severe winter storm, and wildfire.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire	
Description of the Solution:	The Village will obtain a new display rack for this information through the County to increase outreach at Village Hall. Additionally, the Village will ensure that this information is readily available to all socially vulnerable populations.		
Lead Agency:	Rockland County Office of Fire and Emergency Services		
Supporting Agencies:	Village Hall		
Estimated Cost:	Low (<\$10,000)		
Potential Funding Sources:	Local		
Implementation Timeline:	Short-term (< 5 years)		
Goals Met:	3, 7		
Benefits:	The Village residents will be better prepared for incoming hazard events that may occur in the Village.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	The display rack could include materials in other languages and make information accessible to individuals with limited internet access.		
Impact on Critical Facilities/Lifelines:	N/A		
Impact on Capabilities:	This information may improve the Village’s ability to maximize its capabilities and resources to mitigate future hazard impacts and prepare for emergencies.		
Impact on Future Development:	N/A		
Climate Change Considerations:	Climate change is resulting in an increase in intensity and frequency of precipitation events.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem continues
	Make brochures available online		Not all residents have computer access

Action 2024-Airmont-04. Enhance Village Discharge Code

Action Name:	2024-Airmont-04. Enhance Village Discharge Code		
Description of the Problem:	The Village’s codes are not stringent on illicit discharge and pumping of materials into waterbodies which negatively influences the water quality of the water in the Village. Severe storms, winter storms and flood all impact the waterbodies in the Village.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	As part of the Village’s comprehensive review of their codes, the Village will enhance the illicit discharge section by prohibiting dumping of vegetative and other debris into stream channels.		
Lead Agency:	Village Engineer and Planner		
Supporting Agencies:	Building/Planning Department		
Estimated Cost:	Low (<\$10,000)		
Potential Funding Sources:	Local		
Implementation Timeline:	Short-term (< 5 years)		
Goals Met:	1, 2, 6, 7		
Benefits:	This action would benefit all people that use the Village water, whether it be recreationally, or for consumption.		
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	Some socially vulnerable populations may be more dependent on the water bodies in the Village for potable water.		
Impact on Critical Facilities/Lifelines:	This code could minimize potential discharge that may negatively affect water sources or other critical lifelines.		
Impact on Capabilities:	This enhancement will strengthen the Village’s ability to mitigate excessive stormwater runoff and related pollution.		
Impact on Future Development:	N/A		
Climate Change Considerations:	Climate change is resulting in an increase in intensity and frequency of precipitation events.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem continues
	Develop standalone ordinance		Lack of connectivity to comprehensive plan actions

Action 2024-Airmont-05. Erie Railroad Row Drainage Improvements

Action Name:	2024-Airmont-05. Erie Railroad Row Drainage Improvements		
Description of the Problem:	The culvert under Erie Railroad Row is undersized and contributes to area flooding due to an increase in intensity and frequency of severe storm and severe winter storm events.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The Village will conduct a study to determine the correct sized culvert that is needed under Erie Railroad Row.		
Lead Agency:	Village Engineer		
Supporting Agencies:	Public Works/Highway Department		
Estimated Cost:	High (> \$100,000)		
Potential Funding Sources:	Local, State, FEMA HMA/FMA		
Implementation Timeline:	Short-term (< 5 years)		
Goals Met:	1, 2		
Benefits:	The Village will experience reduced flooding along Erie Railroad Row.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	N/A		
Impact on Critical Facilities/Lifelines:	These improvements aim to ensure the nearby transportation corridors are not flooded.		
Impact on Capabilities:	N/A		
Impact on Future Development:	Future development in this area may be less vulnerable to flooding, if the action is completed.		
Climate Change Considerations:	Climate change is leading to an increase in frequency and intensity of precipitation events.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem continues
	Raise Erie Railroad Row		Not feasible

Action 2024-Airmont-06. Comprehensive Plan Update

Action Name:	2024-Airmont-06. Comprehensive Plan Update		
Description of the Problem:	The master plan does not currently incorporate natural hazard areas in the zoning and development section such as dam/levee areas, flood zones (these are also impacted by severe storms and severe winter storms), earthquakes, and high landslide and wildfire susceptibility areas.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire	
Description of the Solution:	The Village is in process of updating their Master Plan. The Village will consider including a review of the mitigation plan and incorporating natural hazard zones in the zoning and development sections of the plan.		
Lead Agency:	Village Planner		
Supporting Agencies:	Planning Department		
Estimated Cost:	Medium (\$10,000 to \$100,000)		
Potential Funding Sources:	Local, State		
Implementation Timeline:	Short-term (< 5 years)		
Goals Met:	1, 2, 7		
Benefits:	The Village will have a more current and up to date master plan.		
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	The plan update could evaluate whether the needs of socially vulnerable populations are being met, and if not, it could identify potential strategies to address them.		
Impact on Critical Facilities/Lifelines:	The plan could identify deficiencies in the Village’s services and assets, such as water resources or utilities, and identify potential efficiencies or strategies to address them.		
Impact on Capabilities:	The planning process will provide a unified initiative for the Village to streamline initiatives and efforts to mitigate the area’s risks to hazard impacts.		
Impact on Future Development:	The plan could identify code enhancements or potential projects that affect future development.		
Climate Change Considerations:	The plan could include climate considerations to assess the Village’s future vulnerabilities.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem continues
	Develop standalone plans		Lack of connectivity to Comprehensive Plan

Action 2024-Airmont-07. MS4 Data Integration

Action Name:	2024-Airmont-07. MS4 Data Integration		
Description of the Problem:	The Village does not have access to MS4 data so that the Village can use the data for mapping. This would help to understand issues related to flooding from severe storms and severe winter storms..		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The Village will work with the Stormwater Consortium to integrate Village MS4 data into its GIS Map Portal. The Village is participating with the County for mapping of its stormwater system. The Stormwater Consortium has secured a grant to work more with the County on how to get data and mapping from MS4 program from Villages and Town integrated into the County GIS map portal. Data standardization is needed for outfalls based on differing users and use of data.		
Lead Agency:	Village Engineer		
Supporting Agencies:	Building Department		
Estimated Cost:	Medium (\$10,000 to \$100,000)		
Potential Funding Sources:	Local, State		
Implementation Timeline:	Short-term (< 5 years)		
Goals Met:	1, 2, 7		
Benefits:	This action allows for Village to map its stormwater system to better understand flooding issues and allows them to identify potential projects that may be needed.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	N/A		
Impact on Critical Facilities/Lifelines:	The accessibility of this data will allow it to be integrated into future planning efforts that may affect the capacity and location of critical facilities and lifelines.		
Impact on Capabilities:	This project will improve the capabilities of the Village by making the data easier to access and use.		
Impact on Future Development:	The accessibility of this data will allow it to be integrated into future planning efforts that may affect the capacity and location of new development.		
Climate Change Considerations:	Climate change is leading to an increase in frequency and intensity of precipitation events.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem continues

	Work independently from the County on data and mapping	Lack of County support, no regional standardization of data
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Action 2024-Airmont-08. Brookside Avenue Culvert Replacement

Action Name:	2024-Airmont-08. Brookside Avenue Culvert Replacement		
Description of the Problem:	The culvert on Brookside Avenue is deteriorating and under-sized, contributing to flooding in the area from an increase in precipitation events such as severe storms and severe winter storms.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The Village of Airmont intends to replace the deteriorating and inadequately sized culvert running for 100 feet along Brookside Avenue with new piping that is 24 inches in diameter. The installation will mitigate the problem of flooding to the road and area properties and ensure access to area properties and to NYS Route 59 where it intersects with Brookside Avenue. Route 59 is the major route to the local hospital.		
Lead Agency:	Village Engineer		
Supporting Agencies:	Building Department		
Estimated Cost:	High (> \$100,000)		
Potential Funding Sources:	Local, State		
Implementation Timeline:	Short-term (< 5 years)		
Goals Met:	1, 2		
Benefits:	This action allows for a reduction in flooding in and around Brookside Avenue.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	N/A		
Impact on Critical Facilities/Lifelines:	This project aims to ensure the accessibility of Brookside Avenue during flooding events and ensures access to area properties and the Route 59 intersection, which is a major route to the local hospital.		
Impact on Capabilities:	this action strengthens the Village’s capability to handle flood events.		
Impact on Future Development:	This project can help mitigate potential damage to surrounding areas, including any potential future development near Brookside Avenue at the Route 59 intersection.		
Climate Change Considerations:	Climate change is leading to an increase in frequency and intensity of precipitation events.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low

Alternatives	Action	Evaluation
	No action	Current problem continues
	Raise roadway	Not cost effective

Action 2024-Airmont-09. Flood-prone Roadway Mitigation Solutions

Action Name:	2024-Airmont-09. Flood-prone Roadway Mitigation Solutions	
Description of the Problem:	The Village has identified many roadways, specifically County owned roads, that repeatedly flood due to an increase in precipitation from severe storms and severe winter storms.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Village and County will develop specific mitigation solutions for flood-prone road systems (roads, bridges, intersections, drainage, etc.) under the leadership of County DPW. One potential location is the intersection of S. Monsey Road.	
Lead Agency:	Village Mayor, Village Engineer	
Supporting Agencies:	Highway Department, County Department of Public Works	
Estimated Cost:	High (> \$100,000)	
Potential Funding Sources:	Local, State	
Implementation Timeline:	Short-term (< 5 years)	
Goals Met:	1, 2	
Benefits:	This action allows for a reduction in flood events in the Village.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	N/A	
Impact on Critical Facilities/Lifelines:	This project aims to ensure the accessibility of roadways during flooding events and ensures access to emergency routes and critical facilities.	
Impact on Capabilities:	This action strengthens the Village’s capability to work with the County and improve roadways.	
Impact on Future Development:	This project can help mitigate potential damage along any affected roadways.	
Climate Change Considerations:	Climate change is leading to an increase in frequency and intensity of precipitation events, which leads to an increase in flooding.	
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium
		<input type="checkbox"/> Low
Alternatives	Action	Evaluation

	No action	Current problem continues
	Raise or relocate roadways	Not cost effective/feasible

Action 2024-Airmont-10. South Amundsen Lane Drainage Resolution

Action Name:	2024-Airmont-10. South Amundsen Lane Drainage Resolution	
Description of the Problem:	The Village owned road: South Amundsen Lane has insufficient drainage, which leads to an increase in flooding events from an increase in precipitation events from severe storms and severe winter storms.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Village will conduct a drainage study to increase drainage on South Amundsen Lane to mitigate flooding. Once solutions are identified, the Village will implement the best and most cost-effective solution.	
Lead Agency:	Village Engineer	
Supporting Agencies:	Highway Department	
Estimated Cost:	Medium (\$19,000)	
Potential Funding Sources:	Local, State, Capital Improvement funding	
Implementation Timeline:	Short-term (< 5 years)	
Goals Met:	1, 2	
Benefits:	The Village will experience improved drainage along South Amundsen Lane.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	N/A	
Impact on Critical Facilities/Lifelines:	This project aims to ensure the accessibility of roadways during flooding events and ensures access to emergency routes and critical facilities.	
Impact on Capabilities:	This action improves the Village capabilities to handle flooding.	
Impact on Future Development:	This project can help mitigate potential damage along any affected roadways.	
Climate Change Considerations:	Climate change is leading to an increase in frequency and intensity of precipitation events, which leads to an increase in flooding.	
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives	Action	Evaluation

	No action	Current problem continues
	Raise roadway	Not cost effective

Action 2024-Airmont-11. Laura Drive Drainage Improvements

Action Name:	2024-Airmont-11. Laura Drive Drainage Improvements	
Description of the Problem:	The Village experiences flooding along Laura Drive and adjacent properties due to severe storms and severe winter storms.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Village will improve the drainage channel along Laura Drive by providing greater protection than that provided by the original installation. The project will consist of the removal of approximately 740 square feet of damaged gabion baskets and install approximately 740 square feet of Redi-Roc wall stone and trim the area with surge stone. The improvements will be better able to withstand the force and volume of water during heavy rain events, such as the area experienced during Irene and Sandy, and will protect the road and area properties from further damage.	
Lead Agency:	Village Engineer	
Supporting Agencies:	Highway Department	
Estimated Cost:	High (> \$100,000)	
Potential Funding Sources:	Local, State, FEMA HMA/FMA, BRIC	
Implementation Timeline:	Short-term (< 5 years)	
Goals Met:	1, 2	
Benefits:	The Village will experience reduced flooding along Laura Drive and nearby properties.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	N/A	
Impact on Critical Facilities/Lifelines:	This project aims to ensure the accessibility of roadways during flooding events and ensures access to emergency routes and critical facilities.	
Impact on Capabilities:	This action strengthens the Village’s capabilities to handle flooding events.	
Impact on Future Development:	This project can help mitigate potential damage along any affected roadways.	
Climate Change Considerations:	Climate change is leading to an increase in frequency and intensity of precipitation events, which leads to an increase in flooding.	

Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem continues
	Raise roadway and properties		Not cost effective

Action 2024-Airmont-12. Critical Facilities in the Floodplain

Action Name:	2024-Airmont-12. Critical Facilities in the Floodplain		
Description of the Problem:	There are three potable wells and one pump station located in the floodplain in the Village that are potentially vulnerable to flood events as identified during the Rockland County HMP update. The Village does not have jurisdiction over these facilities to mitigate.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The Village will notify the private potable-well and pump station owners regarding these critical facilities' flood vulnerability identified during the Rockland County HMP update and NYS' requirement to protect to the 500-year flood or worst-case scenario. The Village will provide the owners information regarding grant options for funding to implement their mitigation. Potential feasible projects may include the following: elevations, dry floodproofing, backup power supply, retrofits, or relocation. The private owners will need to determine the most cost effective and feasible mitigation action for these facilities.		
Lead Agency:	Village Mayor, Property Owners		
Supporting Agencies:	Village Engineer, Building Department		
Estimated Cost:	High (> \$100,000)		
Potential Funding Sources:	FEMA HMA, FMA, BRIC		
Implementation Timeline:	Short-term (< 5 years)		
Goals Met:	1, 2		
Benefits:	This action allows critical facilities to be given mitigation alternatives to ensure operation during flood events.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	N/A		
Impact on Critical Facilities/Lifelines:	This project aims to ensure the accessibility of roadways during flooding events and ensures access to emergency routes and critical facilities.		
Impact on Capabilities:	This action strengthens the Village's critical facility operation.		
Impact on Future Development:	This project can help mitigate potential damage along any affected roadways.		
Climate Change Considerations:	Climate change is leading to an increase in frequency and intensity of precipitation events, which leads to an increase in flooding		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation

	No action	Current problem continues
	Elevate well and pump station infrastructure	Not cost effective
	Dry floodproof and install back-up power support or generator	Not cost effective
	Retrofit the structure(s) with a sensor that would seal the well itself off from floodwaters, like a backflow preventer	Not cost effective
	Drill a new well outside the floodplain	Not feasible

Action 2024-Airmont-13. Severe Storm Mitigation Maintenance

Action Name:	2024-Airmont-13. Severe Storm Mitigation Maintenance	
Description of the Problem:	The Village is susceptible to downed trees, power outages and structural damages due to flood, severe storms and severe winter storms.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Village will complete tree trimming along powerlines and road right of ways and will ensure drainage culverts and catch basins are frequently cleaned.	
Lead Agency:	Building/Public Works Department	
Supporting Agencies:	Village Engineer	
Estimated Cost:	Medium (\$10,000 to \$100,000)	
Potential Funding Sources:	CDBG-DR	
Implementation Timeline:	Short-term (< 1 year)	
Goals Met:	1, 2	
Benefits:	This action guides maintenance of important utility areas.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	N/A	
Impact on Critical Facilities/Lifelines:	This project aims to ensure the accessibility of roadways during flooding events and ensures access to emergency routes and critical facilities.	
Impact on Capabilities:	N/A	
Impact on Future Development:	N/A	
Climate Change Considerations:	This action will reduce the risk of severe storms creating damage through fallen trees and power lines, among other impacts.	
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium <input type="checkbox"/> Low

Alternatives	Action	Evaluation
		No action

Action 2024-Airmont-14. Village Outreach

Action Name:	2024-Airmont-14. Village Outreach		
Description of the Problem:	Village residents are not aware of the resources available to inform them on potential hazards and risks they face, including but not limited to dam/levee failure, disease outbreak, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, and wildfire.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire	
Description of the Solution:	The Village will utilize and disseminate the County materials to provide educational materials and information to residents with the intent of reducing their exposure and impacts to natural hazards.		
Lead Agency:	Village Planner		
Supporting Agencies:	County		
Estimated Cost:	Low (< \$10,000)		
Potential Funding Sources:	Local		
Implementation Timeline:	Short-term (< 1 year)		
Goals Met:	1, 2		
Benefits:	This action would educate Village residents on incoming hazard events.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	These materials could be translated into different languages, posted in community centers, and made accessible to populations with limited internet access.		
Impact on Critical Facilities/Lifelines:	N/A		
Impact on Capabilities:	N/A		
Impact on Future Development:	These materials may inform potential property owners or developers on areas that may be more vulnerable to hazard impacts.		
Climate Change Considerations:	Climate change is leading to an increase in frequency and intensity of precipitation events, which leads to an increase in flooding.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low

Alternatives	Action	Evaluation
	No action	Current problem continues
	Distribute materials online	Lack of accessibility for those with no internet access or limited technical capabilities

Action 2024-Airmont-15. Substantial Damage Determination Training and Resources

Action Name:	2024-Airmont-15. Substantial Damage Determination Training and Resources	
Description of the Problem:	The municipality does not have a Substantial Damage Management Ordinance, nor do they have a standard process in place when conducting substantial damage determinations following a dam/levee failure, drought, earthquake, extreme temperature event, flood, landslide, severe storm, severe winter storm, or wildfire.. The Village has substantial damage determination provisions in both the adopted NFIP ordinance and adopted building code, but staff are unaware of these provisions and do not leverage them.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	<p>The municipality will develop a Substantial Damage Management Plan, following the six-step planning process in 2021 Developing a Substantial Damage Management Plan (https://crsresources.org/files/500/developing_subst_damage_mgmt_plan.pdf). This plan will outline responsibilities for Substantial Damage determinations, determining market value, and permit approval processes following a disaster event.</p> <p>The municipality will also take part in workshops and training sessions offered by NYSDEC to train staff on the existing provisions in the NFIP ordinance and building code.</p>	
Lead Agency:	Floodplain Administrator	
Supporting Agencies:	Building Department	
Estimated Cost:	Low	
Potential Funding Sources:	Municipal budget	
Implementation Timeline:	Within 5 years to develop the plan; ongoing to maintain and update the plan	
Goals Met:	2, 5, 7	
Benefits:	This plan will provide a process in making Substantial Damage Determinations and allow the municipality to make these determinations and meet NFIP requirements more quickly.	
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)

CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Substantially damaged structures are required to be rebuilt to be compliance with current codes. Socially vulnerable populations may not have the financial means to make these improvements. This action may allow for the identification of potential resources to address substantial damages to structures owned by socially vulnerable populations.	
Impact on Critical Facilities/Lifelines:	A Substantial Damage Management Plan would include all critical facilities and lifelines in the municipality.	
Impact on Capabilities:	This action improves disaster recovery capabilities.	
Impact on Future Development:	A Substantial Damage Management Plan would include all existing, current, and future development in the municipality.	
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related disaster events. This action provides additional planning for disaster recovery.	
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No Action	No change
	Rely on state or federal resources following disaster events	Resources may not be available during major widespread events
	Establish MOUs with outside agencies to conduct Substantial Damage Determinations	A plan outlining responsibilities is still necessary to prevent missing important requirements

SECTION 9. JURISDICTIONAL ANNEXES

9.3 VILLAGE OF CHESTNUT RIDGE

This jurisdictional annex to the Rockland County Hazard Mitigation Plan (HMP) provides information to assist public and private sectors in the Village of Chestnut Ridge with reducing losses from future hazard events. This annex is not guidance of what to do when a disaster occurs; its focus is on actions that can be implemented prior to a disaster to reduce or eliminate damage to property and people. The annex presents a general overview of the Village of Chestnut Ridge, describes who participated in the planning process, assesses the Village’s risk, vulnerability, and capabilities, and outlines a strategy for achieving a more resilient community.

9.3.1 Hazard Mitigation Planning Team

The Village of Chestnut Ridge identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Village departments. The Village Engineer represented the community on the Rockland County HMP Planning Partnership and Steering Committee and supported the local planning process by securing input from persons with specific knowledge to enhance the plan. All departments were asked to contribute to the annex development through reviewing and contributing to the capability assessment, reporting on the status of previously identified actions, and participating in action identification and prioritization.

Table 9.3-1 summarizes village officials that participated in the development of the annex and in what capacity. Additional documentation on the village’s planning process through Planning Partnership meetings is included in Volume I.

Table 9.3-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Martin Spence Address: 86 E. Allendale Road, Saddle River, NJ 07458 Phone Number: 201-934-0300 Email: mkspence@spenceengineering.com	Name/Title: Haris Aljovic Address: 86 E. Allendale Road, Saddle River, NJ 07458 Phone Number: 201-934-0300 Email: haljovic@spenceengineering.com
National Flood Insurance Program Floodplain Administrator	
Name/Title: Martin Spence Address: 86 E. Allendale Road, Saddle River, NJ 07458 Phone Number: 201-934-0300 Email: mkspence@spenceengineering.com	

9.3.2 Municipal Profile

The Village of Chestnut Ridge is located in the Town of Ramapo. It is bordered to the north by the Village of Spring Valley, to the south by New Jersey, to the east by the Towns of Orangetown and Clarkstown, and to the west of the Village of Airmont. The Village of Chestnut Ridge was incorporated in 1986. The Village has a total area of 4.9 square miles.

Research has shown that some populations are at greater risk from hazard events because of decreased resources or physical abilities. These populations can be more susceptible to hazard events based on a number of factors including their physical and financial ability to react or respond during a hazard, and the location and construction quality of their housing. Data from the 2017-2021 American Community Survey indicates that 13.4 percent of the population is five years of age or younger, 15.5 percent is 65 years of age or older, 6.0 percent is non-English speaking, 19.1 percent is below the poverty threshold, and 11.3 percent is considered disabled.

9.3.3 Jurisdictional Capability Assessment and Integration

Village of Chestnut Ridge performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Volume I describes the components included in the capability assessment and their significance for hazard mitigation planning. The jurisdictional assessment for this annex includes analyses of the following:

- Planning and regulatory capabilities
- Development and permitting capabilities
- Administrative and technical capabilities
- Fiscal capabilities
- Education and outreach capabilities
- Classification under various community mitigation programs
- Adaptive capacity to withstand hazard events

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into day-to-day local government operations. As part of the hazard mitigation analysis, planning and /policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress toward plan integration. Development of an updated mitigation strategy provided an opportunity for the Village of Chestnut Ridge to identify opportunities for integrating mitigation concepts into ongoing Village procedures.

Planning, Legal, and Regulatory Capability and Integration

Table 9.3-2 summarizes the regulatory tools that are available to Village of Chestnut Ridge.

Table 9.3-2. Planning, Legal, and Regulatory Capability and Integration

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Codes, Ordinances, & Regulations				
Building Code	Yes	Chapter 118	State, Local	Building Inspector and Fire Inspector
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The Building Code has provisions to strengthen and elevate construction to withstand hazard forces, meet those outlined in the NFIP, and include development standards for withstanding storm surge, wind damage, earthquakes, and other hazards.				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Zoning/Land Use Code	Yes	Chapter 290	Local	Building Inspector
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
As part of any minimum lot area requirement of this chapter for residential uses, not more than 50 percent of any land underwater, subject to or within the 100-year-frequency floodplain, designated wetlands, within easements or rights-of-way for overhead utilities, with slopes (unexcavated) of over 25 percent or within a designated street line of any road shall be counted. At least 50 percent of the minimum lot area requirement shall consist of land without the above-listed impediments. The application of this section to any particular lot shall be the responsibility of the Village Planning Board or the Building Inspector as the case may be.				
Subdivision Code	Yes	Chapter 254	Local	Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
Land to be subdivided shall be of such character that it can be used safely for building purposes without danger to health, or peril from fire, flood or other menace, and land shall not be subdivided until available municipal services, facilities and improvements exist and proper provision has been made for drainage, water, sewerage and capital improvements such as schools, transportation, parks and other needed improvements.				
Site Plan Code	Yes	Chapter 290, Article IX	Local	Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
Land to be subdivided shall be of such character that it can be used safely for building purposes without danger to health, or peril from fire, flood or other menace, and land shall not be subdivided until available municipal services, facilities and improvements exist and proper provision has been made for drainage, water, sewerage and capital improvements such as schools, transportation, parks and other needed improvements.				
Stormwater Management Code	Yes	Chapter 243	Local	Stormwater Management Officer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The purpose of this article is to provide for the health, safety, and general welfare of the citizens of the Village of Chestnut Ridge through the regulation of non-stormwater discharges to the municipal separate storm sewer system (MS4) to the maximum extent practicable as required by federal and New York State law.				
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Real Estate Disclosure Requirements	Yes	New York State (NYS) mandate, Property Condition Disclosure Act, <i>NY Code – Article 14 §460-467</i>	State and local	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The NYS mandate requires sellers to disclose to potential buyers whether their property is located in a designated floodplain.				
Growth Management	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Environmental Protection Ordinance(s)	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Flood Damage Prevention Ordinance	Yes	Chapter 158 (2013)	Federal, State, Local	Village Engineer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
This chapter promotes the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by provisions designed to regulate uses which are dangerous to health, safety and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities.				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Wellhead Protection	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Emergency Management Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Climate Change Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other: Freeboard	Yes	State Code	State	Village Engineer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> State mandated BFE+2 for single and two-family residential construction, BFE+1 for all other construction types.				
Planning Documents				
General/Comprehensive Plan	Yes	Village of Chestnut Ridge Comprehensive Plan (2022)	Local	Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Comprehensive Plan discusses FEMA floodplain maps and development near wetlands.				
Capital Improvement Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Disaster Debris Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Floodplain Management or Watershed Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Stormwater Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Open Space Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Urban Water Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Habitat Conservation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Economic Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Community Wildfire Protection Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Community Forest Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Transportation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Agriculture Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Climate Action/ Resiliency/Sustainability Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Tourism Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Business/ Downtown Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Other (for example NYRCR, etc.)	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
-				
Response/Recovery Planning				
Emergency Operations Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Continuity of Operations Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Substantial Damage Response Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Threat & Hazard Identification & Risk Assessment	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Post-Disaster Recovery Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Public Health Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

Development and Permitting Capability

Table 9.3-3 summarizes the capabilities of Village of Chestnut Ridge to oversee and track development.

Table 9.3-3. Development and Permitting Capability

Indicate if your jurisdiction implements the following	Yes/No	Comment:
Do you issue development permits? <ul style="list-style-type: none"> If you issue development permits, what department is responsible? If you do not issue development permits, what is your process for tracking new development? 	Yes	Buildings Department
Are permits tracked by hazard area? (For example, floodplain development permits.)	No	-
Do you have a buildable land inventory? <ul style="list-style-type: none"> If you have a buildable land inventory, please describe 	No	-
Describe the level of build-out in your jurisdiction.	N/A	-

Administrative and Technical Capability

Table 9.3-4 summarizes potential staff and personnel resources available to Village of Chestnut Ridge and their current responsibilities that contribute to hazard mitigation.

Table 9.3-4. Administrative and Technical Capabilities

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
<i>Administrative Capability</i>		
Planning Board	Yes	The Village of Chestnut Ridge Planning Board is made up of five Members and meet once a month. The Planning Board reviews and grants approvals for site plans and subdivisions. They also make recommendations to the Zoning Board of Appeals and Village Board on zoning and planning matters.
Zoning Board of Adjustment	Yes	The Village of Chestnut Ridge Zoning Board of Appeals consists of seven members and meets once a month. The Zoning Board considers appeals for variances from the zoning ordinance, appeals of decisions made by the Building Inspector, and requests for zoning interpretations.
Planning Department	Yes	Planning and Zoning Department
Mitigation Planning Committee	No	-
Environmental Board/Commission	No	-

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
Open Space Board/Committee	No	-
Economic Development Commission/Committee	No	-
Public Works/Highway Department	No	-
Construction/Building/Code Enforcement Department	Yes	The Building Department reviews and issues building permits. The Building Department works with new homeowners and long-time residents interested in building a new home, or making alterations to an existing one, as well as people wishing to do commercial construction and alterations, including change in occupancy.
Emergency Management/Public Safety Department	No	-
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	No	-
Mutual aid agreements	Yes	Stormwater Consortium of Rockland County
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	No	-
Other: Community Development and Review Committee (CDRC)	Yes	The Community Development and Review Committee (CDRC) is a sub-committee of the Village Planning Board and consists of the Assistant Village Attorney for the Planning Board, the Village Planner, and the Village Consulting Engineer to provide preliminary review prior to formal application to the Planning Board. All applicants applying for a Planning Board action must first attend CDRC.
<i>Technical/Staffing Capability</i>		
Planners or engineers with knowledge of land development and land management practices	Yes	Village Engineer
Engineers or professionals trained in building or infrastructure construction practices	Yes	Village Engineer
Planners or engineers with an understanding of natural hazards	No	-
Staff with expertise or training in benefit/cost analysis	No	-
Professionals trained in conducting damage assessments	No	-
Personnel skilled or trained in GIS and/or Hazus applications	No	-
Staff that work with socially vulnerable populations or underserved communities		
Environmental scientist familiar with natural hazards	No	-
Surveyor(s)	No	-
Emergency Manager	No	-
Grant writer(s)	No	-
Resilience Officer	No	-
Other (this could include stormwater engineer, environmental specialist, etc.)	No	-

Fiscal Capability

Table 9.3-5 summarizes financial resources available to Village of Chestnut Ridge.

Table 9.3-5. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use? (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	Yes, Village Board
Capital improvements project funding	Yes, Village Board
Authority to levy taxes for specific purposes	Yes, Village Board
User fees for water, sewer, gas or electric service	No
Impact fees for homebuyers or developers of new development/homes	Yes, Village Board
Stormwater utility fee	No
Incur debt through general obligation bonds	Yes, Village Board
Incur debt through special tax bonds	N/A
Incur debt through private activity bonds	N/A
Withhold public expenditures in hazard-prone areas	Yes, Village Board
Other federal or state Funding Programs	Yes – Consolidated Local Street and Highway Improvement Program (CHIPs) through NYSDOT
Open Space Acquisition funding programs	Yes, Village Board
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	No

Education and Outreach Capability

Table 9.3-6 summarizes the education and outreach resources available to Village of Chestnut Ridge.

Table 9.3-6. Education and Outreach Capabilities

Outreach Resources	Available? (Yes/No)	Comment:
Public information officer or communications office	No	-
Personnel skilled or trained in website development	No	-
Hazard mitigation information available on your website	Yes	The Village distributes flyers and posts information on the municipal website regarding natural hazards in the community
Social media for hazard mitigation education and outreach	No	-
Citizen boards or commissions that address issues related to hazard mitigation	No	-
Warning systems for hazard events	Yes	The County utilizes NY-Alert and CodeRed (the backup to NY-Alert) for emergency notifications (all Towns and Villages have access to it).
Natural disaster/safety programs in place for schools	No	-
Organizations that conduct outreach to socially vulnerable populations and underserved populations		
Does the jurisdiction have any public outreach mechanisms / programs in place to inform citizens on natural hazards, risk, and ways to protect themselves during such events?	Yes	Village Newsletter; Email list serve to community members providing village updates.

Community Classifications

Table 9.3-7 summarizes classifications for community programs available to Village of Chestnut Ridge.

Table 9.3-7. Community Classifications

Program	Participating? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	No	-	-
New York State Department of Environmental Conservation (NYSDEC) Climate Smart Community	No	-	-
National Weather Service Storm Ready Certification	No	-	-
Firewise Communities classification	No	-	-
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable
 — = Unavailable

Adaptive Capacity

Adaptive capacity is defined as “the ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or respond to consequences” (IPCC 2022). Each jurisdiction has a unique combination of capabilities to adjust to, protect from, and withstand a future hazard event, future conditions, and changing risk. Table 2-8 summarizes the adaptive capacity for each identified hazard of concern and the Village’s capability to address related actions using the following classifications:

- Strong: Capacity exists and is in use.
- Moderate: Capacity might exist; but is not used or could use some improvement.
- Weak: Capacity does not exist or could use substantial improvement

Table 9.3-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Disease Outbreak	Moderate
Drought	Moderate
Earthquake	Moderate
Extreme Temperature	Moderate
Flood	Moderate
Landslide	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

9.3.4 National Flood Insurance Program Compliance

This section provides specific information on the management and regulation of the regulatory floodplain, including current and future compliance with the National Flood Insurance Program (NFIP). The floodplain administrator listed in Table 2-1 is responsible for maintaining this information.

NFIP Summary

Table 9.3-9 summarizes the NFIP statistics for Village of Chestnut Ridge.

Table 9.3-9. Village of Chestnut Ridge NFIP Summary of Policy and Claim Statistics

# Policies	17
# Claims (Losses)	13
Total Loss Payments	\$184,281
# Repetitive Loss Properties (NFIP definition)	0
# Repetitive Loss Properties (FMA definition)	1
# Severe Repetitive Loss Properties	0
# Policies Within the 1 percent Annual Chance Flood Boundary	0

NFIP Definition of Repetitive Loss: The NFIP defines a repetitive loss property as any insurable building for which two or more claims of more than \$1,000 were paid by the NFIP within any rolling 10-year period since 1978.

FMA Definition of Repetitive Loss: FEMA’s Flood Mitigation Assistance (FMA) program defines a repetitive loss property as any insurable building that has incurred flood-related damage on two occasions, in which the cost of the repair, on average, equaled or exceeded 25 percent of the market value of the structure at the time of each such flood event.

Definition of Severe Repetitive Loss: A residential property covered under an NFIP flood insurance policy and: (a) That has at least four NFIP claim payments over \$5,000 each, and the cumulative amount of such claims payments exceeds \$20,000; or (b) For which at least two separate claims payments have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building. At least two of the claims must have occurred within any 10-year period, more than 10 days apart.

Source: FEMA, December 2023

Note: RL count may include properties also identified as SRL.

Flood Vulnerability Summary

Table 9.3-10 provides a summary of the NFIP program in Village of Chestnut Ridge.

Table 9.3-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	Roads near Pascack Brook such as: Williams Road, Nicole Way, Christine Drive, Grotke Road, Ronwood Road, Hubert Humphrey Drive, etc. Areas near Pascack Brook such as Grotke Road are prone to flooding.
Do you maintain a list of properties that have been damaged by flooding?	Unknown at this time.
Do you maintain a list of property owners interested in flood mitigation?	Unknown at this time.
How many homeowners and/or business owners are interested in mitigation (elevation or acquisition)?	N/A
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what projects are underway.	No
How do you make Substantial Damage determinations?	If needed, Building Department and Village Engineer would perform an onsite inspection.
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	None

NFIP Topic	Comments
How many properties have been mitigated (elevation or acquisition) in your jurisdiction? <ul style="list-style-type: none"> If there are mitigation properties, how were the projects funded? 	None
Do your flood hazard maps adequately address the flood risk within your jurisdiction? <ul style="list-style-type: none"> If not, state why. 	Yes
NFIP Compliance	
What local department is responsible for floodplain management?	Village Engineer
Are any certified floodplain managers on staff in your jurisdiction?	Yes, Village Engineer
Do you have access to resources to determine possible future flooding conditions from climate change?	Unknown at this time.
Does your floodplain management staff need any assistance or training to support its floodplain management program? <ul style="list-style-type: none"> If so, what type of assistance/training is needed? 	Yes, seminars with current trends and data.
Provide an explanation of NFIP administration services you provide (e.g., permit review, GIS, education/outreach, inspections, engineering capability)	Engineering
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	During Review, calculations of increase in volume and SF determined.
What are the barriers to running an effective NFIP program in the community, if any?	Unknown at this time.
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? <ul style="list-style-type: none"> If so, state the violations. 	Unknown at this time.
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	June 29, 2020
What is the local law number or municipal code of your flood damage prevention ordinance?	Chapter 158 Flood Damage Prevention. Adopted by the Board of Trustees of the Village of Chestnut Ridge 3-21-2013 by L.L. No. 5-2013. Amendments noted where applicable.
What is the date that your flood damage prevention ordinance was last amended?	2013
Does your floodplain management program meet or exceed minimum requirements? <ul style="list-style-type: none"> If exceeds, in what ways? 	Meets
Are there other local ordinances, plans or programs (e.g., site plan review) that support floodplain management and meeting the NFIP requirements? For instance, does the planning board or zoning board consider efforts to reduce flood risk when reviewing variances such as height restrictions?	Unknown at this time.
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	Unknown at this time.

9.3.5 Growth/Development Trends

Understanding how past, current, and projected development patterns have or are likely to increase or decrease risk in hazard areas is a key component to appreciating a jurisdiction’s overall risk to its hazards of concern. Recent

and expected future development trends, including major residential/commercial development and major infrastructure development, are summarized in Table 9.3-11 through Table 9.3-13.

Table 9.3-11. Number of Building Permits for New Construction Issued Since the Previous HMP

	New Construction Permits Issued			Total
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	
2019				
Total Permits	22	0	2	24
Permits within SFHA	0	0	0	0
2020				
Total Permits	27	0	1	28
Permits within SFHA	0	0	0	0
2021				
Total Permits	33	0	2	35
Permits within SFHA	0	0	0	0
2022				
Total Permits	35	0	3	38
Permits within SFHA	0	0	0	0
2023				
Total Permits	41	0	2	43
Permits within SFHA	0	0	0	0

SFHA = Special Flood Hazard Area (1 percent flood event)

Table 9.3-12. Recent Major Development and Infrastructure from 2018 to Present

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
GoldLand Industrial Park	Office and Warehouse	2 buildings	Chestnut Ridge Rd	N/A	Under Construction
Piazza Subdivision	Residential Subdivision	5 Individual Lots	Coleman Court	N/A	Under Construction
Complete Auto Repair	Office and Garage	1 Building	Old Nyack Turnpike	N/A	Under Construction
Artis Senior Living	Assisted Living	1 Building	Chestnut Ridge Rd	N/A	Under Construction
Fox Development	Factory and Warehouse	1 Building	Chestnut Ridge Rd	N/A	Completed, CO Issued
Coptic Orthodox Church	House of Worship	1 Building	Chestnut Ridge Rd	N/A	Project abandoned
Wellington Educational	Private School	4 Buildings	Red Schoolhouse Rd	N/A	Under Construction
Congregation Dexter Park	House of Worship	1 Building	Samuel Rd	N/A	Under Construction
Congregation Torah Utfillah	House of Worship	1 Building	Roxbury Ct	N/A	Under Construction

* Only location-specific hazard zones or vulnerabilities identified.

Table 9.3-13. Known or Anticipated Major Development and Infrastructure in the Next Five Years

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
OHR Yosef	School and Subdivisions	1+4 Individual Lots	Ackertown Rd	N/A	Anticipated state in summer 2024

* Only location-specific hazard zones or vulnerabilities identified.

9.3.6 Jurisdictional Risk Assessment

The hazard profiles in Volume I provide detailed information regarding each planning partner’s vulnerability to the identified hazards, including summaries of the Village of Chestnut Ridge’s risk assessment results and data used to determine the hazard ranking. Key local risk assessment information is presented below.

Hazard Ranking

Hazard area maps provided below illustrate the probable hazard areas impacted within the Village are shown in Figure 9.3-1 through Figure 9.3-2. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps are provided only for hazards that can be identified clearly using mapping techniques and technologies and for which Chestnut Ridge has significant exposure. The maps show the location of potential new development, where available.

Figure 9.3-1. Village of Chestnut Ridge Flood and Dam Inundation Hazard Area Extent and Location

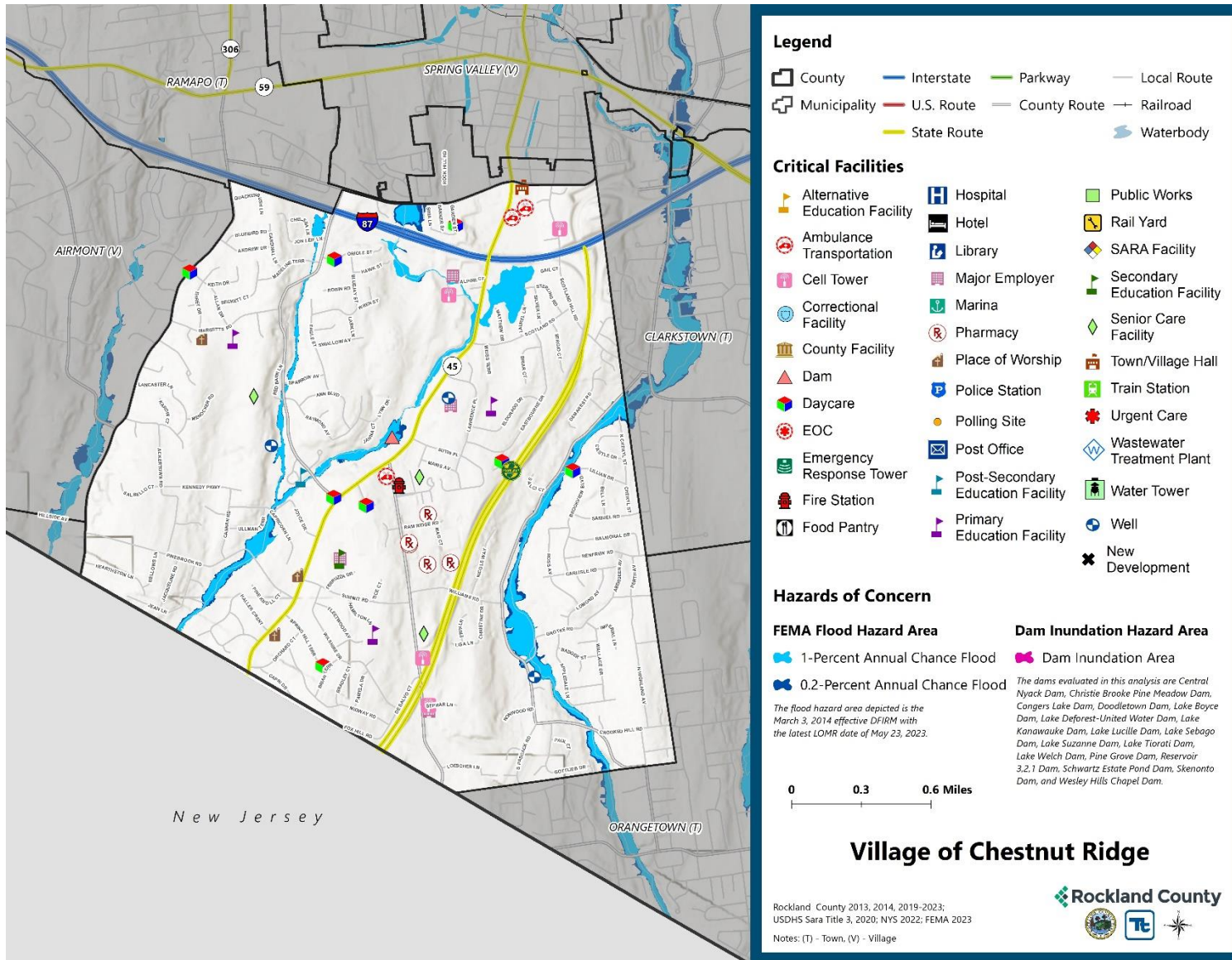
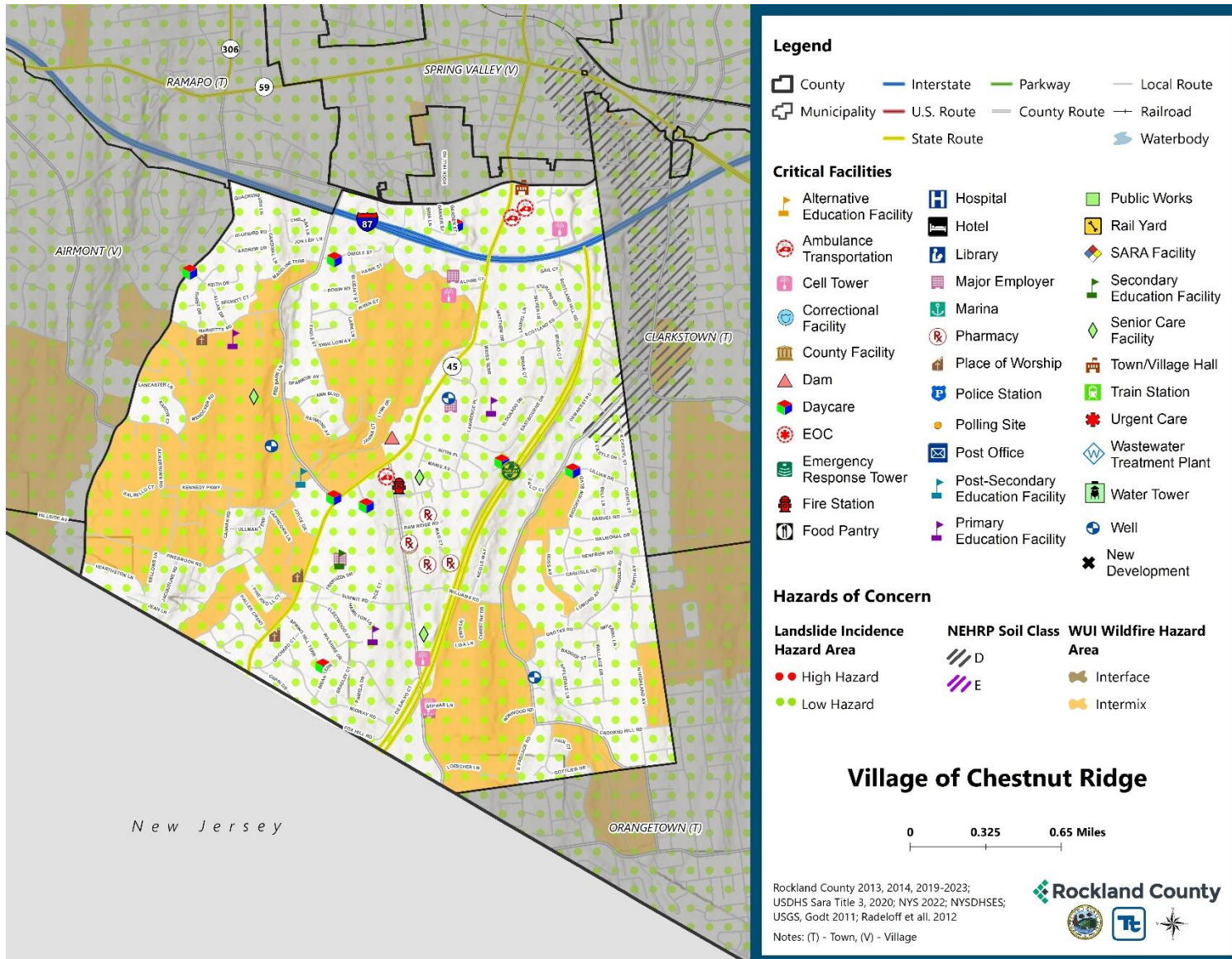


Figure 9.3-2. Village of Chestnut Ridge Landslide, Earthquake, and Wildfire Hazard Area Extent and Location



Hazard Event History

The history of natural and non-natural hazard events in the Village of Chestnut Ridge is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 9.3-14 provides details on loss and damage in the Village during hazard events since the last hazard mitigation plan update.

Table 9.3-14. Hazard Event History in the Village of Chestnut Ridge

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Summary of Damage and Losses in the Village
January 20, 2020 - May 11, 2023	New York Covid-19 (3434-EM-NY, 4480-DR-NY)	Yes	The Covid-19 pandemic resulted in nationwide shutdowns, social distancing and masking requirements, and immunization efforts. Since the start of the pandemic, roughly 950 deaths have been reported in Rockland County. The federal Public Health Emergency expired in May 2023 but illness continues to occur as the virus shifts to becoming endemic.	-
April 13, 2020	High Winds		High winds across the county led to downed trees, power outages, closed roads,	\$200,000 in property damage
August 4, 2020	New York Tropical Storm Isaias (4567-DR-NY)	Yes	The center of Isaias passed about 65 miles west of New York City at 3 pm on August 4, 2020. Tropical storm force winds extended well east of the center of circulation. In addition, 1 to 3 inches of rainfall, highest west, were recorded across the county. These types of winds and rainfall across the area resulted in numerous trees and tree limbs being downed, power outages, damages to homes and automobiles, and disruption to transit.	-
August 21-24, 2021	New York Hurricane Henri (3565-EM-NY)	Yes	Rainfall from Tropical Storm Henri resulted in widespread flash flooding across southeastern New York, particularly portions of the Lower Hudson Valley. Rainfall totals generally ranged from 2-5 inches, with this rain coming in addition to the 2-5 inches that fell during the predecessor rainfall event the night before.	-

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Summary of Damage and Losses in the Village
September 1-3, 2021	New York Remnants of Hurricane Ida (3572-EM-NY, 4615-DR-NY)	Yes	Extremely heavy rainfall associated with the remnants of Hurricane Ida overspread southeast New York during the evening of September 1 and continued through the early morning hours of September 2. Rainfall totals ranged from 5-8 inches across much of the region, with much of that rain falling in just a few hours. This resulted in widespread catastrophic flash flooding.	Pavement/shoulder erosion damages along Williams Road due to storm water runoff under Thruway/Parkway extension. Multiple emails sent to the state (NYS Thruway) officials.
July 9-10, 2023	Severe Storm, Flooding		Severe storms and flooding resulted in road closures, including portions of the Palisades Interstate Parkway, throughout Rockland County.	Pavement/shoulder erosion damages along Williams Road due to storm water runoff under Thruway/Parkway extension. Multiple emails sent to the state (NYS Thruway) officials.

EM = Emergency Declaration (FEMA)
 FEMA = Federal Emergency Management Agency
 DR = Major Disaster Declaration (FEMA)
 N/A = Not applicable

Hazard Ranking and Vulnerabilities

The hazard profiles in Volume I have detailed information regarding each planning partner’s vulnerability to the identified hazards. The following summarizes presents key risk assessment results for the Village of Chestnut Ridge.

Hazard Ranking

The participating jurisdictions have differing degrees of vulnerability to the hazards of concern, so each jurisdiction ranked its own degree of risk to each hazard. The community-specific hazard ranking is based on problems and impacts identified by the risk assessment presented in Volume I. The ranking process involves an assessment of the likelihood of occurrence for each hazard; the potential impacts of the hazard on people, property, and the economy; community capabilities to address the hazard; and changing future climate conditions. Chestnut Ridge reviewed the County hazard ranking and individual results to assess the relative risk of the hazards of concern to the community. During the review of the hazard ranking, the Village indicated the following:

- Hazard adaptative capacity and risk has not changed since the last plan update.

Table 9.3-15 shows the Village of Chestnut Ridge’s final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 9.3-15. Hazard Ranking

Hazard	Rank
Dam Failure	Low
Disease Outbreak	Medium
Drought	Medium
Earthquake	Low
Extreme Temperature	Medium
Flood	Medium
Landslide	Low
Severe Weather	High
Severe Winter Weather	High
Wildfire	Medium

Note: The scale is based on the hazard rankings established in Volume I, modified as appropriate based on review by the jurisdiction

Critical Facilities

Table 9.3-16 identifies critical facilities in the community located in the 1-percent and 0.2-percent annual chance floodplains.

Table 9.3-16. Critical Facilities Flood Vulnerability

Name	Type	Exposure		Addressed by Proposed Action	Already Protected to 0.2 percent Flood Level (describe protections)
		1 percent Event	0.2 percent Event		
Sgobbo Dam	Dam	Yes	Yes	2024-ChestnutRidge-11	No

Source: Rockland County 2023, FEMA

In addition to critical facilities that are exposed to flooding, there are no high hazard dams located in or that could impact Village of Chestnut Ridge.

Identified Issues

After review of the Village of Chestnut Ridge’s hazard event history, hazard rankings, hazard location, and current capabilities, the Village of Chestnut Ridge identified the following vulnerabilities within their community:

- Schools in the Village do not have procedures set up for weather drills to prepare students and teachers in the event of an emergency, such as a dam/levee failure, earthquake, flood, landslide, severe storm, severe winter storm and wildfires. Additionally, schools need to establish procedures in the event of a disease outbreak, similar to COVID. Severe weather is frequent in the Village, with some events occurring during the school day. Village residents are not aware of hazards that they are exposed to and what can be done to further protect themselves and their properties from damages. The hazards that the Village is at risk for include dam/levee failure, disease outbreak, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, and wildfire. Not all residents are aware of the hazards they are exposed to or what they can do to protect themselves and their property from potential damage. The

Village does not have access to MS4 data so that the Village can use the data for mapping. This would help to understand issues related to flooding from severe storms and severe winter storms. is not available online for use. There is a need for data and mapping of the MS4 program from village and towns in the County. There are properties in the Village that experience repetitive flood damage. Flood-vulnerable properties place an undue stress on the property owner and the Village. and efforts should be made to mitigate them.

- The Village has identified many roadways, specifically County owned roads, that repeatedly flood due to an increase in precipitation from severe storms and severe winter storms. Many roadways, in particular County roads, repeatedly flood.
- The Village’s current emergency response plan does not include the functional-needs registry which takes into account residents with limited mobility and/or special needs. These needs must be stated in the emergency response plan so that the Village can meet the needs of all of the residents. This registry will help prepare the Village for dam/levee failure, disease outbreak, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, and wildfire.
- The Village’s floodplain ordinance was last updated in 2013 and may be less effective than current regulations require. There are some facilities that were built before code updates and may be more vulnerable to damage from hazard event such as flood and severe storm events.
- The Village’s floodplain management and ordinance enforcement staff are not Certified Floodplain Managers and flooding is becoming more common and frequent from severe storms and severe winter storms.
- The Village does not participate in CRS and could benefit from the associated incentives for flooding and severe storm events. The Village needs to identify whether joining the program will be beneficial to the community and its residents.
- Recent rainstorms and flood events are damaging public infrastructure (roads and drainage) as well as causing bank erosion at multiple locations in the Village including Williams Rd, Grotke Rd, Ronwood Rd, etc.
- There is one dam located in the floodplain in the Village and potentially vulnerable to flood events and dam failures as identified during the Rockland County HMP update. The Village does not have jurisdiction over the structure to mitigate.

**This issue was identified as a specific area of concern based on resident response to the Rockland County Hazard Mitigation Citizen survey.*

9.3.7 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and prioritizes actions to address over the next five years.

Past Mitigation Initiative Status

Table 9.3-17 indicates progress on the Village’s mitigation strategy identified in the 2019 HMP. Actions that are still recommended but not completed or that are in progress are carried forward and combined with new actions as part of the mitigation strategy for this plan update. Previous actions that are now ongoing programs and capabilities are indicated as such and are presented in the capability assessment earlier in this annex.

Additional Mitigation Efforts

In addition to the mitigation initiatives completed in Table 9.3-17, the Village of Chestnut Ridge has not identified additional mitigation efforts completed since the last HMP.

Since the adoption of the County's first HMP, Village of Chestnut Ridge has made significant mitigation progress in the following areas:

- Coordinating with the New York State Thruway Authority regarding flooding Williams Road.

Table 9.3-17. Status of Previous Mitigation Actions

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Chestnut Ridge-1	Hazard Mitigation Partnerships	All Hazards	Village	The Village is small with limited capabilities to support hazard mitigation efforts on its own. Develop partnership with neighboring villages to coordinate efforts related to hazard mitigation.	1. No Progress 2. N/A	1. Discontinue 2. N/A 3. The Village can partner with neighboring municipalities and seek support from the County on an as-needed basis.
V. Chestnut Ridge-2	Hazard Drills	All Hazards	School District	Severe weather is frequent in the Village, with some events occurring during the school day. Establish severe weather drills each semester in all village schools.	1. In Progress 2. N/A	1. Include 2. N/A 3. N/A
V. Chestnut Ridge-3	Preparedness Campaign	All Hazards	Village, Rockland County	Severe weather events are frequent in the Village. Residents should be informed of how to prepare themselves for these events. Undertake a preparedness campaign for severe weather events, including website.	1. In Progress 2. N/A	1. Discontinue 2. N/A 3. Replace this action with a more comprehensive strategy to address outreach and awareness in the Village (2024-ChestnutRidge-02).

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Chestnut Ridge-4	Stormwater Management Program Enhancements	All Hazards	Village, Town of Ramapo, Stormwater Consortium of Rockland County	The Village is always looking for ways to improve its stormwater management practices. Enhance existing stormwater management program by using best practices from surrounding municipalities and the County.	1. In Progress 2. N/A	1. Discontinue 2. N/A 3. This is an ongoing capability, and the Village can update its stormwater management ordinances and enforcement on an as-needed basis as State requirements and vulnerabilities change.
V. Chestnut Ridge-5	Comprehensive Plan Update	All Hazards	Village, Rockland County	The Village currently does not refer to the HMP while updating planning documents. Work with Rockland County to integrate hazard mitigation and hazard areas into the Village's comprehensive plans.	1. In Progress 2. N/A	1. Discontinue 2. N/A 3. The Village adopted a new Comprehensive Plan in 2022, and it discusses flood hazards.
V. Chestnut Ridge-6	MS4 Data Integration	All Hazards	Village, Rockland County	MS4 data is not available online for use. Work with the Stormwater Consortium to integrate Village MS4 data into its GIS Map Portal.	1. In Progress 2. N/A	1. Include 2. Revised descriptions of problem and solution. 3. N/A
V. Chestnut Ridge-7	Public Workshops	All Hazards	Village	Residents may not be informed of zoning and planning regulations which limit develop. Hold periodic workshops regarding zoning and planning issues that arise regarding natural hazards and hazard mitigation.	1. Ongoing Capability 2. N/A	1. Discontinue 2. N/A 3. The Village can host these workshops on an as needed basis.

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Chestnut Ridge-8	Floodplain Management Practices	Flood	Village	The Village is always looking for ways to improve its floodplain management practices. Continue to implement best management practices for floodplain areas.	1. In Progress 2. N/A	1. Discontinue 2. N/A 3. The Village can continue to implement best practices and update its activities on an as-needed basis as regulations change or vulnerabilities intensify.
V. Chestnut Ridge-9	NFIP Capabilities	Flood	Village	The Village currently does not maintain a list of repetitive loss properties or of property owners who may be interested in flood mitigation measures. Identify and document repetitively flooded properties. Work with owners to explore mitigation opportunities for repetitively flooded properties, and if appropriate and feasible, carry out acquisition, relocation, elevation and floodproofing measures to protect these properties.	1. No Progress 2. N/A	1. Include 2. N/A 3. N/A
V. Chestnut Ridge-10	Flood-prone Roadways Mitigation Solutions	Flood	Village DPW, Rockland County	Many roadways, in particular County roads, repeatedly flood. Develop specific mitigation solutions for flood prone road systems (roads, bridges, intersections, drainage, etc.) under the leadership of County DPW.	1. In Progress 2. In communication with NYS Thruway Authority regarding Williams Road flooding	1. Include 2. N/A 3. N/A

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Chestnut Ridge-11	Critical Facility Protections	All Hazards	Village	<p>Critical facilities in the Village are old and may need additional or stronger protections from natural hazards.</p> <p>Determine the year built and level of protection for critical emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide some degree of protection from natural hazards and pursue potential mitigation opportunities to protect these sites as funding becomes available.</p>	<p>1. No Progress 2. N/A</p>	<p>1. Discontinue 2. N/A 3. The Village can determine this information on an as-needed basis and when seeking grant funding.</p>
V. Chestnut Ridge-12	Functional-Needs Registry	All Hazards	Village, Rockland County	<p>The Village does not maintain a list of individuals who may need additional assistance during a hazard event.</p> <p>Work with Rockland County to obtain access to the functional-needs registry that was developed in 2010.</p>	<p>1. In Progress 2. N/A</p>	<p>1. Include 2. N/A 3. N/A</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Chestnut Ridge-13	Strengthening Local Codes and Ordinances	All Hazards	Village	<p>The Village’s codes and ordinances may not include language to mitigate or protect itself from all hazards.</p> <p>Review existing local codes and ordinances against the identified hazards to determine whether there needs to be any amendments to address identified hazards and, where a need is identified; modify/amend the codes/ordinances as applicable.</p>	<p>1. No Progress 2. N/A</p>	<p>1. Include 2. This action was revised to focus on floodplain ordinances and codes. The problem and solution descriptions were updated. 3. N/A</p>
V. Chestnut Ridge-14	Code Enforcement	All Hazards	Village	<p>The Village is in charge of enforcing the NYS and local building codes.</p> <p>Continue the enforcement of NYS and local building codes.</p>	<p>1. In Progress 2. N/A</p>	<p>1. Discontinue 2. N/A 3. This is an ongoing capability, and the Village can update or upgrade its enforcement to reflect revised regulations.</p>
V. Chestnut Ridge-15	Floodplain Management Ordinance FEMA Regulation Updates	Flood	Village	<p>The flood damage prevention ordinance may not comply with recent FEMA regulation changes.</p> <p>Update/revise floodplain management ordinance to comply with latest FEMA regulations.</p>	<p>1. In Progress 2. N/A</p>	<p>1. Discontinue 2. N/A 3. Consolidate with old action (V. Chestnut Ridge-16) into new action (2024-Chestnut Ridge-07).</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Chestnut Ridge-16	Floodplain Management Ordinance FIRM Updates	Flood	Village	The flood damage prevention ordinance may not be consistent with the most updated FEMA FIRMs. Update/review floodplain management ordinances to be consistent with potential future new FIRMs.	1. No Progress 2. N/A	1. Discontinue 2. N/A 3. Consolidate with old action (V. Chestnut Ridge-15) into new action (2024-Chestnut Ridge-07).
V. Chestnut Ridge-17	Certified Floodplain Managers	Flood	Village	Floodplain management and ordinance enforcement staff are not Certified Floodplain Managers. Require staff involved in floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs).	1. In Progress 2. N/A	1. Include 2. N/A 3. N/A
V. Chestnut Ridge-18	CRS Program Participation	Flood	NFIP FPA, Local Government Officials	The Village is not currently in the CRS program. The Village needs to identify whether or not joining the program will be beneficial to the community and its residents. Support participation in the NFIP Community Rating System (CRS) program by attending CRS workshop(s) if offered within the county. Join the CRS program if adequate resources to support long term participation can be dedicated.	1. In Progress 2. N/A	1. Include 2. Determine the costs and benefits of the Village joining the CRS program to support the decision whether to participate. 3. N/A

Proposed Hazard Mitigation Initiatives for the HMP Update

Chestnut Ridge participated in the mitigation strategy workshop for this HMP to identify appropriate actions to include in a local hazard mitigation strategy. Its comprehensive consideration of all possible activities to address hazards of concern included review of the following FEMA documents:

- FEMA 551 “Selecting Appropriate Mitigation Measures for Floodprone Structures” (March 2007)
- FEMA “Mitigation Ideas—A Resource for Reducing Risk to Natural Hazards” (January 2013).

The action worksheets included at the end of this annex list the mitigation actions that Chestnut Ridge would like to pursue in the future to reduce the effects of hazards. The actions are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in the Village’s priorities.

Table 9.3-18 indicates the range of proposed mitigation action categories. The four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table to further demonstrate the wide range of activities and mitigation measures selected.

Table 9.3-18. Analysis of Mitigation Actions by Hazard and Category

Hazard	FEMA				CRS					
	LPR	SIP	NSP	EAP	PR	PP	PI	NR	SP	ES
Dam Failure	-	1	-	4	-	1	2	-	-	2
Disease Outbreak	-	-	-	3	-	-	2	-	-	1
Drought	-	-	-	3	-	-	2	-	-	1
Earthquake	-	-	-	4	-	-	2	-	-	2
Extreme Temperature	-	-	-	4	-	-	2	-	-	2
Flood	3	3	1	7	5	2	4	1	1	2
Landslide	-	-	-	4	-	-	2	-	-	2
Severe Weather	3	3	1	7	5	2	4	1	1	2
Severe Winter Weather	-	1	-	6	-	1	4	-	-	2
Wildfire	-	-	-	4	-	-	2	-	-	2

Local Plans and Regulations (LPR)—These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.

Structure and Infrastructure Project (SIP)—These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct structures to reduce the impact of hazards.

Natural Systems Protection (NSP)—These are actions that minimize damage and losses and preserve or restore the functions of natural systems.

Education and Awareness Programs (EAP)—These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities

Preventative Measures (PR)—Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.

Property Protection (PP)—These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.

Public Information (PI)—Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.

Natural Resource Protection (NR)—Actions that minimize hazard loss and preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.

Structural Flood Control Projects (SP)—Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.

Emergency Services (ES)—Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities.

Table 9.3-19. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Other Community Objectives	Total	High / Medium / Low
2024-Chestnut Ridge-01	Severe Weather Drills in Schools	1	1	1	0	0	1	0	1	1	1	0	0	0	1	8	Medium
2024-Chestnut Ridge-02	Public Awareness and Outreach	1	1	1	0	1	1	0	1	1	1	0	1	1	1	11	High
2024-Chestnut Ridge-03	MS4 Data Integration	1	1	1	0	0	0	0	1	1	1	1	0	1	0	8	Medium
2024-Chestnut Ridge-04	Document Flood-prone Properties	1	1	1	0	0	1	1	1	1	1	1	0	1	1	11	High
2024-Chestnut Ridge-05	Flood-prone Roadway Mitigation Solutions	1	1	1	0	0	0	1	0	1	1	1	0	1	0	8	Medium
2024-Chestnut Ridge-06	Functional Needs Registry	1	1	1	0	0	1	0	1	1	1	0	1	1	0	9	Medium
2024-Chestnut Ridge-07	Update Floodplain Management Ordinance	1	1	1	0	1	0	1	0	1	1	1	1	1	0	10	Medium
2024-Chestnut Ridge-08	Certified Floodplain Manager Training	1	1	1	0	0	0	1	0	1	1	1	0	1	0	8	Medium
2024-Chestnut Ridge-09	Community Rating System (CRS)	1	1	1	0	0	1	1	0	1	1	0	0	1	0	8	Medium
2024-Chestnut Ridge-10	Bank Stabilization	0	1	1	1	1	0	1	0	1	1	0	1	1	1	10	Medium
2024-ChestnutRidge-11	Critical Facilities in the Floodplain	1	1	1	0	0	0	1	0	0	0	1	1	1	0	7	Medium

Note: Volume I, Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14).

Action 2024-Chestnut Ridge-01. Severe Weather Drills in Schools

Action Name:	2024-Chestnut Ridge-01. Severe Weather Drills in Schools		
Description of the Problem:	Schools in the Village do not have procedures set up for weather drills to prepare students and teachers in the event of an emergency, such as a dam/levee failure, earthquake, flood, landslide, severe storm, severe winter storm and wildfires. Additionally, schools need to establish procedures in the event of a disease outbreak, similar to COVID.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire	
Description of the Solution:	The Village will establish severe weather drills each semester in all village schools.		
Lead Agency:	Village School District		
Supporting Agencies:	Village Engineer, Rockland County OES		
Estimated Cost:	Medium (\$10,000 to \$100,000)		
Potential Funding Sources:	Municipal Budget		
Implementation Timeline:	Short-term (< 5 years)		
Goals Met:	1, 2, 3, 4, 5, 6, 7		
Benefits:	Medium (\$10,000 to \$100,000)		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	This initiative can provide information and resources to all students at Village schools, which may include families that are low-income, do not speak English, or exhibit other characteristics of social vulnerability.		
Impact on Critical Facilities/Lifelines:	Schools will have procedures set up to instruct students and teachers on how to handle a hazard event during school hours.		
Impact on Capabilities	This initiative will better prepare the Village to respond to hazard events to ensure the safety of students and workers in the schools.		
Impact on Future Development:	N/A		
Climate Change Considerations:	Climate change is leading to an increase in frequency and intensity of precipitation events.		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low

Alternatives	Action	Evaluation
	Do nothing	Problem persists
	Conduct annual drills	Less frequent drills may lead to insufficient preparedness

Action 2024-Chestnut Ridge-02. Public Awareness and Outreach

Action Name:	2024-Chestnut Ridge-02. Public Awareness and Outreach	
Description of the Problem:	Village residents are not aware of hazards that they are exposed to and what can be done to further protect themselves and their properties from damages. The hazards that the Village is at risk for include dam/levee failure, disease outbreak, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, and wildfire.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	The Village will improve public awareness on hazards, prevention, and mitigation through increased outreach, including but not limited to periodic discussion of hazard mitigation and the mitigation plan at other regular local meetings; use of annual flyers, newsletters, advertisements, or radio/TV announcements, etc.; and incorporating as much free information as possible from the FEMA publications warehouse and other appropriate sources on the Village website.	
Lead Agency:	Village Mayor	
Supporting Agencies:	Rockland County Office of Emergency Services	
Estimated Cost:	Low (< \$10,000)	
Potential Funding Sources:	Operating Budget	
Implementation Timeline:	Short-term (< 5 years)	
Goals Met:	1, 2, 3, 4, 5, 6, 7	
Benefits:	This action aims to educate Village residents.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	This initiative approach aims to reach populations that are low-income, do not speak English, and have limited internet access or technical capabilities.	
Impact on Critical Facilities/Lifelines:	N/A	
Impact on Capabilities	This action strengthens the Village education and outreach capabilities.	
Impact on Future Development:	N/A	

Climate Change Considerations:	Climate change is leading to an increase in frequency and intensity of precipitation events.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	Do nothing		Problem persists
	Update website		Would not reach those with limited internet or technology
	Request local non-profits undertake preparedness campaign		Not sustainable over time

Action 2024-Chestnut Ridge-03. MS4 Data Integration

Action Name:	2024-Chestnut Ridge-03. MS4 Data Integration	
Description of the Problem:	The Village does not have access to MS4 data so that the Village can use the data for mapping. This would help to understand issues related to flooding from severe storms and severe winter storms. is not available online for use. There is a need for data and mapping of the MS4 program from village and towns in the County.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Village will work with the Stormwater Consortium to integrate Village MS4 data into its GIS Map Portal. The Village is participating with the County for mapping of its stormwater system. The Stormwater Consortium has secured a grant to work more with the County on how to get data and mapping from MS4 program from Villages and Town integrated into the County GIS map portal. Data standardization is needed for outfalls based on differing users and use of data.	
Lead Agency:	Village Engineer	
Supporting Agencies:	Building Department	
Estimated Cost:	Medium (\$10,000 to \$100,000)	
Potential Funding Sources:	Local, State	
Implementation Timeline:	Short-term (< 5 years)	
Goals Met:	1, 2, 7	
Benefits:	This action allows for Village to map its stormwater system to better understand flooding issues and allows them to identify potential projects that may be needed.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	N/A	
Impact on Critical Facilities/Lifelines:	The accessibility of this data will allow it to be integrated into future planning efforts that may affect the capacity and location of critical facilities and lifelines.	

Impact on Capabilities	This project will improve the capabilities of the Village by making the data easier to access and use.		
Impact on Future Development:	The accessibility of this data will allow it to be integrated into future planning efforts that may affect the capacity and location of new development.		
Climate Change Considerations:	Climate change is leading to an increase in frequency and intensity of precipitation events.		
Priority: Check one	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem continues
	Work independently from the County on data and mapping		Lack of County support, no regional standardization of data

Action 2024-ChestnutRidge-04. Document Flood-prone Properties

Action Name:	2024- ChestnutRidge-04. Document Flood-prone Properties		
Description of the Problem:	There are properties in the Village that experience repetitive flood damage from severe storm events. Flood-vulnerable properties place an undue stress on the property owner and the Village.		
Hazard(s) of Concern: Check all that apply	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The Village will work with owners located in and around the floodplain to explore mitigation opportunities for repetitively flooded properties, and if appropriate and feasible, carry out acquisition, relocation, elevation, and flood proofing measures to protect these properties.		
Lead Agency:	Village Engineer, Private Property Owners		
Supporting Agencies:	Village, Building Department		
Estimated Cost:	Low (< \$10,000)		
Potential Funding Sources:	FEMA (HMGP, FMA, PDM), CDBG, NYS DHSES, Village Operating Budget		
Implementation Timeline:	Short-term (<5 years)		
Goals Met:	1, 2, 3, 5,7		
Benefits:	This action will reduce the amount of flood prone properties and will increase outreach amongst the Village.		
Mitigation Action Type: Check all that apply	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: Check all that apply	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	This project could make it easier for the County and Village to reach homeowners with vulnerable properties.		

Impact on Critical Facilities/Lifelines:	N/A		
Impact on Capabilities	Data will help village and county design future mitigation actions and outreach to vulnerable residents.		
Impact on Future Development:	This project could help reduce potential impact of flooding on nearby future development.		
Climate Change Considerations:	This project could help identify potential areas or properties for potential buyouts or floodplain restoration projects.		
Priority: Check one	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Problem persists
	Identify repetitive loss areas		Not action-driven and does not reduce or eliminate vulnerability

Action 2024-ChestnutRidge-05. Flood-prone Roadway Mitigation Solutions

Action Name:	2024-ChestnutRidge-05. Flood-prone Roadway Mitigation Solutions		
Description of the Problem:	The Village has identified many roadways, specifically County owned roads, that repeatedly flood due to an increase in precipitation from severe storms and severe winter storms.		
Hazard(s) of Concern: Check all that apply	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The Village will develop specific mitigation solutions for flood-prone road systems (roads, bridges, intersections, drainage, etc.) under the leadership of County DPW.		
Lead Agency:	Village Department of Public Works, Village Engineer		
Supporting Agencies:	Highway Department, County Department of Public Works		
Estimated Cost:	High (> \$100,000)		
Potential Funding Sources:	Local, State		
Implementation Timeline:	Short-term (< 5 years)		
Goals Met:	1, 2		
Benefits:	This action allows for a reduction in flood events in the Village.		
Mitigation Action Type: Check all that apply	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: Check all that apply	<input checked="" type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	N/A		

Impact on Critical Facilities/Lifelines:	This project aims to ensure the accessibility of roadways during flooding events and ensures access to emergency routes and critical facilities.		
Impact on Capabilities:	This action strengthens the Village’s capability to work with the County and improve roadways.		
Impact on Future Development:	This project can help mitigate potential damage along any affected roadways.		
Climate Change Considerations:	Climate change is leading to an increase in frequency and intensity of precipitation events, which leads to an increase in flooding.		
Priority: Check one	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Alternatives
	No action		Problem persists
	Raise or relocate roadways		Not cost-effective and does not eliminate vulnerability

Action 2024-ChestnutRidge-06. Functional Needs Registry

Action Name:	2024-ChestnutRidge-06. Functional Needs Registry		
Description of the Problem:	The Village’s current emergency response plan does not include the functional-needs registry which takes into account residents with limited mobility and/or special needs. These needs must be stated in the emergency response plan so that the Village can meet the needs of all of the residents. This registry will help prepare the Village for dam/levee failure, disease outbreak, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, and wildfire.		
Hazard(s) of Concern: Check all that apply	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire	
Description of the Solution:	The Village will work with Rockland County to obtain access to the functional-needs registry that was developed in 2010.		
Lead Agency:	Village		
Supporting Agencies:	Rockland County OES		
Estimated Cost:	Low (< \$10,000)		
Potential Funding Sources:	Local, State		
Implementation Timeline:	Short-term (< 5 years)		
Goals Met:	1, 2, 5, 7		
Benefits:	This action strengthens the Village’s ability to support their residents, including socially vulnerable populations.		
Mitigation Action Type: Check all that apply	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: Check all that apply	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)	

Impact on Socially Vulnerable Populations:	This project will identify where residents with limited mobility and/or special needs are located to pre-identify areas that may require additional services, like evacuation or medical services, during hazard events.		
Impact on Critical Facilities/Lifelines:	N/A		
Impact on Capabilities:	This project will better prepare the Village to respond during hazard events to protect the lives and safety of its residents.		
Impact on Future Development:	N/A		
Climate Change Considerations:	Climate change is leading to an increase in frequency and intensity of precipitation events, which leads to an increase in flooding.		
Priority: Check one	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Alternatives
	No action		Problem persists
	Develop standalone registry		Not cost-effective

Action 2024-ChestnutRidge-07. Update Floodplain Management Ordinance

Action Name:	2024-ChestnutRidge-07. Update Floodplain Management Ordinance		
Description of the Problem:	The Village’s floodplain ordinance was last updated in 2013 and may be less effective than current regulations require. There are some facilities that were built before code updates and may be more vulnerable to damage from hazard event such as flood and severe storm events.		
Hazard(s) of Concern: Check all that apply	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	Review potential future new FIRMs or RiskMAP projects and determine the need to update floodplain management ordinances.		
Lead Agency:	Village Engineer		
Supporting Agencies:	Building Department		
Estimated Cost:	Low (< \$10,000)		
Potential Funding Sources:	Local		
Implementation Timeline:	Short-term (< 5 years)		
Goals Met:	1, 2, 3, 5, 7		
Benefits:	This action strengthens the Village’s codes and ordinances.		
Mitigation Action Type: Check all that apply	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	

CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	N/A	
Impact on Critical Facilities/Lifelines:	Ordinance updates may better protect critical facilities and lifelines.	
Impact on Capabilities	A stronger ordinance will allow the Village to enforce more protective standards.	
Impact on Future Development:	Future development will have to follow the ordinance’s provisions.	
Climate Change Considerations:	A stronger ordinance may better prepare the Village for more intense and frequent flooding.	
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No action	Problem persists
	Update floodplain management ordinances with each new FIRM update	Time-consuming and not cost-effective

Action 2024-ChestnutRidge-08. Certified Floodplain Manager Training

Action Name:	2024- ChestnutRidge-08. Certified Floodplain Manager Training
Description of the Problem:	The Village’s floodplain management and ordinance enforcement staff are not Certified Floodplain Managers and flooding is becoming more common and frequent from severe storms and severe winter storms.
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature <input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Village will require staff involved in floodplain management and ordinance enforcement to become Certified Floodplain Managers. The Village will add/train sufficient members of their staff to adequately enforce NFIP regulations/floodplain management ordinances
Lead Agency:	Village
Supporting Agencies:	Building Department
Estimated Cost:	Low (< \$10,000)
Potential Funding Sources:	Operating Budget
Implementation Timeline:	Short-term (< 5 years)
Goals Met:	1, 2, 3, 7
Benefits:	This action strengthens the Village’s ability to enforce floodplain management practices.

Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	N/A	
Impact on Critical Facilities/Lifelines:	This action will familiarize the Village staff with updated floodplain management practices which may benefit critical facilities and infrastructure that could be impacted by flooding.	
Impact on Capabilities	This action will provide the Village with stronger capabilities to enforce and update its floodplain management regulations.	
Impact on Future Development:	N/A	
Climate Change Considerations:	Climate change is leading to an increase in frequency and intensity of precipitation events, which leads to an increase in flooding.	
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No action	Current problem persists
	Require staff to take related courses, but not obtain CFM	Not nationally recognized program; potential to gain CRS points

Action 2024-ChestnutRidge-09. Community Rating System (CRS)

Action Name:	2024- ChestnutRidge-09. Community Rating Systems
Description of the Problem:	The Village does not participate in CRS and could benefit from the associated incentives for flooding and severe storm events. The Village needs to identify whether or not joining the program will be beneficial to the community and its residents
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature <input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Village will support participation in the NFIP Community Rating System (CRS) program by attending CRS workshop(s) if offered within the county. The Village will join the CRS program if adequate resources to support long term participation can be dedicated. See following related Community Assistance Visit (CAV) initiative.
Lead Agency:	Floodplain Administrator
Supporting Agencies:	Village
Estimated Cost:	Low (< \$10,000)
Potential Funding Sources:	Operating Budget
Implementation Timeline:	Short-term (< 5 years)
Goals Met:	1, 2, 3, 7

Benefits:	This action benefits the Village by being able to use CRS incentives and benefits to complete mitigation projects.		
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	N/A		
Impact on Critical Facilities/Lifelines:	CRS activities may better protect critical facilities and lifelines during flood events.		
Impact on Capabilities	Joining CRS may strengthen the Village’s technical knowledge and capability to enforce floodplain management best practices.		
Impact on Future Development:	Future development would have to follow any ordinance revisions that the Village enacts to gain CRS points.		
Climate Change Considerations:	The Village may adopt a stronger ordinance or enact mitigation projects for CRS points that may better prepare the Village for more intense and frequent flooding.		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem persists
	Attend CRS courses in Emmitsburg, MD		Not cost-effective

Action 2024-ChestnutRidge-10. Bank Stabilization

Action Name:	2024- ChestnutRidge-10. Bank Stabilization		
Description of the Problem:	Recent rainstorms and flood events are damaging public infrastructure (roads and drainage) as well as causing bank erosion at multiple locations in the Village including Williams Rd, Grotke Rd, Ronwood Rd, etc.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The Village will provide supplemental drainage as well as streambanks erosion control using structural methods (riprap, gabion basket walls, etc.) and/or Bioengineering methods such as trees, or other living plants to restore natural streambank protection.		
Lead Agency:	Village		
Supporting Agencies:	Town of Ramapo		
Estimated Cost:	High (\$250,000)		
Potential Funding Sources:	Small Flood Control		
Implementation Timeline:	Mid-term (2 to 3 years)		
Goals Met:	2		

Benefits:	This action will reduce flooding in the Village.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR)	<input checked="" type="checkbox"/> Natural Systems Protection (NSP)	<input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR)	<input checked="" type="checkbox"/> Natural Resource Protection (NR)	<input type="checkbox"/> Structural Flood Control Projects (SP)
	<input type="checkbox"/> Property Protection (PP)	<input type="checkbox"/> Structural Flood Control Projects (SP)	<input type="checkbox"/> Emergency Services (ES)
	<input type="checkbox"/> Public Information (PI)		
Impact on Socially Vulnerable Populations:	N/A		
Impact on Critical Facilities/Lifelines:	This project would better protect roads and drainage infrastructure during future heavy precipitation events.		
Impact on Capabilities	this action strengthens the Village’s ability to handle flood events.		
Impact on Future Development:	Future development in the surrounding area may be less vulnerable to damage from future floods.		
Climate Change Considerations:	Climate change is leading to an increase in frequency and intensity of precipitation events, which leads to an increase in flooding		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem persists
	Replace/upgrade public infrastructure without bank stabilization		Future damage may occur

Action 2024-ChestnutRidge-11. Critical Facilities in the Floodplain

Action Name:	2024- ChestnutRidge-11. Critical Facilities in the Floodplain		
Description of the Problem:	There is one dam located in the floodplain in the Village and potentially vulnerable to flood events and dam failures as identified during the Rockland County HMP update. The Village does not have jurisdiction over the structure to mitigate.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure	<input checked="" type="checkbox"/> Flood	<input type="checkbox"/> Landslide
	<input type="checkbox"/> Disease Outbreak	<input type="checkbox"/> Landslide	<input type="checkbox"/> Severe Storm
	<input type="checkbox"/> Drought	<input type="checkbox"/> Severe Winter Storm	<input type="checkbox"/> Wildfire
	<input type="checkbox"/> Earthquake		
	<input type="checkbox"/> Extreme Temperature		
Description of the Solution:	The Village will notify the private owners regarding these critical facilities' flood vulnerability identified during the Rockland County HMP update and NYS' requirement to protect to the 500-year flood or worst-case scenario. The Village will provide the owners information regarding grant options for funding to implement their mitigation. The private owners will need to determine the most cost effective and feasible mitigation action for these facilities.		
Lead Agency:	Village Engineer, Property Owners		
Supporting Agencies:	Building Department		
Estimated Cost:	High (> \$100,000)		
Potential Funding Sources:	FEMA HMA, FMA, BRIC		
Implementation Timeline:	Short-term (< 5 years)		
Goals Met:	1, 2		
Benefits:	This action strengthens the protection of the dam.		

Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	N/A	
Impact on Critical Facilities/Lifelines:	This project aims to ensure the accessibility of roadways during flooding events and ensures access to emergency routes and critical facilities.	
Impact on Capabilities:	this action strengthens the Village’s capabilities in protecting critical infrastructure.	
Impact on Future Development:	This project can help mitigate potential damage along any affected roadways.	
Climate Change Considerations:	Climate change is leading to an increase in frequency and intensity of precipitation events, which leads to an increase in flooding.	
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No action	Problem persists
	Village completes mitigation actions in inundation area	Does not reduce or eliminate risk

SECTION 9. JURISDICTIONAL ANNEXES

9.4 TOWN OF CLARKSTOWN

This jurisdictional annex to the Rockland County Hazard Mitigation Plan (HMP) provides information to assist public and private sectors in the Town of Clarkstown with reducing losses from future hazard events. This annex is not guidance of what to do when a disaster occurs; its focus is on actions that can be implemented prior to a disaster to reduce or eliminate damage to property and people. The annex presents a general overview of the Town of Clarkstown, describes who participated in the planning process, assesses the Town’s risk, vulnerability, and capabilities, and outlines a strategy for achieving a more resilient community.

9.4.1 Hazard Mitigation Planning Team

The Town of Clarkstown identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Town departments. The Police Seargent represented the community on the Rockland County HMP Planning Partnership and Steering Committee and supported the local planning process requirements by securing input from persons with specific knowledge to enhance the plan. All departments were asked to contribute to the annex development through reviewing and contributing to the capability assessment, reporting on the status of previously identified actions, and participating in action identification and prioritization.

Table 9.4-1 summarizes Town officials who participated in the development of the annex and in what capacity. Additional documentation of the Town’s planning activities through Planning Partnership meetings is included in Volume I.

Table 9.4-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Dan Maloney, Police Seargent Address: 20 Maple Ave, New City, NY 10956 Phone Number: (845) 499-8828 Email: d.maloney@clarkstownpd.org	Name/Title: James Fay Address: 20 Maple Ave. New City NY 10956 Phone Number: (845) 639-5830 Email: j.fay@clarkstownpd.org
National Flood Insurance Program Floodplain Administrator	
Name/Title: Michael Gianatasio, PE, Director, DEFM Address: 10 Maple Ave, New City, NY 10956 Phone Number: (845) 639-2111 Email: m.gianatasio@clarkstown.org	
Additional Contributors	
Name/Title: Christopher Wagner, Director of Engineering Method of Participation: Provided information for municipal annex on new development, capabilities, NFIP participation, mitigation strategies, and risk assessment.	

9.4.2 Municipal Profile

The Town of Clarkstown is located along the eastern border of Rockland County. The Town is bordered to the north by the Town of Haverstraw and its inclusive villages, to the south by the Towns of Orangetown and its inclusive villages, to the west by the Town of Ramapo and its inclusive villages, and to the east by the Hudson

River. The following hamlets are found in the Town: Bardonia, Central Nyack, Congers, Nanuet, New City, Valley Cottage, and West Nyack. Lake DeForest, Lake Lucille, and the Hudson River are major bodies of water found throughout the Town. The Town has a total area of 46.9 square miles, of which 38.5 square miles is land and 8.4 square miles is water.

Research has shown that some populations are at greater risk from hazard events because of decreased resources or physical abilities. These populations can be more susceptible to hazard events based on a number of factors including their physical and financial ability to react or respond during a hazard, and the location and construction quality of their housing. Data from the 2017-2021 American Community Survey indicates that 4.6 percent of the population is 5 years of age or younger, 20.6 percent is 65 years of age or older, 5.2 percent is non-English speaking, 4.4 percent is below the poverty threshold, and 9.9 percent is considered disabled.

9.4.3 Jurisdictional Capability Assessment and Integration

The Town of Clarkstown performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Volume I describes the components included in the capability assessment and their significance for hazard mitigation planning. The jurisdictional assessment for this annex includes analyses of the following:

- Planning and regulatory capabilities
- Development and permitting capabilities
- Administrative and technical capabilities
- Fiscal capabilities
- Education and outreach capabilities
- Classification under various community mitigation programs
- Adaptive capacity to withstand hazard events

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into day-to-day local government operations. As part of the hazard mitigation analysis, planning and /policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress toward plan integration. Development of an updated mitigation strategy provided an opportunity for the Town of Clarkstown to identify opportunities for integration of mitigation concepts that can be incorporated into municipal procedures.

Planning, Legal, and Regulatory Capability and Integration

Table 9.4-2 summarizes the regulatory tools that are available to Town of Clarkstown.

Table 9.4-2. Planning, Legal, and Regulatory Capability and Integration

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
<i>Codes, Ordinances, & Regulations</i>				
Building Code	Yes	Town Code Chapter 109; 2022	State, Local	Code Enforcement Officer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The Building Code has provisions to strengthen and elevate construction to withstand hazard forces, meet those outlined in the NFIP, and include development standards for withstanding storm surge, wind damage, earthquakes, and other hazards.				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Zoning/Land Use Code	Yes	Town Code Chapter 290, 1939	Local	Building Inspector
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The densest zoning districts are within and around the Town's Hamlet centers. Natural areas, which often contain or are proximate to streams, floodplains and wetland, and areas targeted for conservation are zoned for lower or the lowest development densities, or, when possible, acquired as open space/parkland or placed within conservation easements. Additionally, new development is required to reduce the post-development 100-year, twenty-four-hour peak discharge rate (Qr) to 10 percent less than predevelopment rates. Deductions to gross lot area are applied to areas of steep slopes, wetlands and areas underwater.				
Subdivision Code	Yes	Town Code Chapter 254, 1987	Local	Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
Deductions to gross lot area are applied to areas of steep slopes, wetlands, and areas underwater. The regulations provide for conservation or cluster subdivisions to conserve environmental resources.				
Site Plan Code	Yes	Town Code Chapter 246, 1986	Local	Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The ordinance aims to ensure the health, safety, welfare, comfort and convenience of the public through several provisions, including Community Lifelines like means of access, water supply, storm drainage, and sanitary sewers.				
Stormwater Management Code	Yes	Town Code Chapter 128, 1974, and Chapter 294A	Local	Director of Engineering and Facilities Management
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
Chapter 294A reduces flooding and erosion risks from construction by requiring minimum standards approved by NYSDEC.				
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Real Estate Disclosure	Yes	New York State (NYS) mandate, Property Condition Disclosure Act, NY Code – Article 14 §460-467	State and local	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The NYS mandate requires sellers to disclose to potential buyers whether their property is located in a designated floodplain.				
Growth Management	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Environmental Protection Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Flood Damage Prevention Ordinance	Yes	Town Code Chapter 146, 2014	Federal, State, Local	Director of Engineering and Facilities Management
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
Chapter 146 reduces risk of flooding by requiring commercial and residential construction within the 100-yr floodplain to meet or exceed minimum standards that meet NFIP criteria.				
Wellhead Protection	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Emergency Management Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Climate Change Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other: Freeboard	Yes	State Code	State, Local	Town Engineer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> State mandated BFE+2 for single and two-family residential construction, BFE+1 for all other construction types.				
Planning Documents				
General/Comprehensive Plan	Yes	2021 Comprehensive Plan	Local	Planning
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The future land-use map identifies natural hazard areas. Deductions to gross lot area are applied to areas of steep slopes, wetlands, and areas underwater. The densest zoning districts are within and around the Town’s Hamlet centers. Natural areas, which often contain or are proximate to streams, floodplains and wetland, and areas targeted for conservation are zoned for lower or the lowest development densities, or, when possible, acquired as open space/parkland or placed within conservation easements				
Capital Improvement Plan	Yes	2016 Capital Improvements Plan	Local	All Departments
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Infrastructure policies limit extending existing facilities and services that would encourage development in hazard-vulnerable areas. The plan provides funding for projects identified in the HMP.				
Disaster Debris Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Floodplain Management or Watershed Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Stormwater Management Plan	Yes	Stormwater Management Program Plan (2013)	Local	DEC
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The plan includes best practices in areas that flooding affects the most.				
Open Space Plan	Yes	2021 Comprehensive Plan	Local	Planning
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The plan prioritizes open green spaces and are planned in areas with high impervious surface coverage.				
Urban Water Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Habitat Conservation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Economic Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Community Wildfire Protection Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Community Forest Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Transportation Plan	Yes	2021 Comprehensive Plan	Local	Planning
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The plan promotes compact, mixed-use development near transit hubs and away from high hazard areas.				
Agriculture Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Climate Action/ Resiliency/Sustainability Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Tourism Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Business/ Downtown Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other (for example NYRCR, etc.)	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Response/Recovery Planning				
Comprehensive Emergency Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Continuity of Operations Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Substantial Damage Response Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Threat & Hazard Identification & Risk Assessment	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Post-Disaster Recovery Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Public Health Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

Development and Permitting Capability

Table 9.4-3 summarizes the capabilities of Town of Clarkstown to oversee and track development.

Table 9.4-3. Development and Permitting Capability

Indicate if your jurisdiction implements the following	Yes/No	Comment:
Do you issue development permits? <ul style="list-style-type: none"> If you issue development permits, what department is responsible? If you do not issue development permits, what is your process for tracking new development? 	No	Site plan and subdivision review and approval; building permits and Certificates of occupancy
Are permits tracked by hazard area? (For example, floodplain development permits.)	Yes	Floodplain development permits are required
Do you have a buildable land inventory? <ul style="list-style-type: none"> If you have a buildable land inventory, please describe 	No	-
Describe the level of build-out in your jurisdiction.	N/A	-

Administrative and Technical Capability

Table 9.4-4 summarizes potential staff and personnel resources available to Town of Clarkstown and their current responsibilities that contribute to hazard mitigation.

Table 9.4-4. Administrative and Technical Capabilities

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
<i>Administrative Capability</i>		
Planning Board	Yes	Meets most Wednesdays at 7:30 PM in Town Hall. Approves site plans and subdivisions. Offers recommendations to the Town Board and Zoning Board on various zoning and planning matters.
Zoning Board of Adjustment	Yes	Meets Mondays, twice a month, except holidays at 7:00 PM in Town Hall. Considers zoning interpretations, special permits, and variances.

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
Planning Department	Yes	<p>The Planning Department has a full time staff which performs all of the administrative functions associated with the Planning Board, Technical Advisory Committee (TAC), Zoning Board of Appeals (ZBA) and the Antenna Advisory Review Board (AAB), and provides information and guidance to town officials and the public relating to town planning and land use. The Planning Department ensures applications are acceptable for Planning Board review prior to placement on the Planning Board agenda and issues reviews and recommendations to the Planning Board, ZBA, TAC and AAB.</p> <p>The Planning Department works to update and develop zoning and land use plans throughout the Town. These plans are reflected in the Town’s Comprehensive Plan, which, when adopted by the Town Board, serves as a guide for land use planning and decisions throughout the Town. The Department obtains public input on these initiatives by coordinating and hosting public meetings and workshops.</p> <p>The Planning Department also employs a Geographic Information Systems (GIS) Coordinator who provides the town with digital mapping and geographic analysis services. The GIS Coordinator works to ensure the Town’s geographic information database is updated and continually expand the information it provides and regularly updates the Project Mapper on the Towns website to provide the public with information on projects before the Planning Board.</p>
Mitigation Planning Committee	No	-
Environmental Board/Commission	No	-
Open Space Board/Committee	No	-
Economic Development Commission/Committee	No	-
Public Works/Highway Department	Yes	The Clarkstown Highway Department provides professional maintenance for all Town roads and related drainage systems, snow plowing, annual yard waste and fall leaf collection, while regularly reviewing each practice for a more efficient and cost-effective approach.
Construction/Building/Code Enforcement Department	Yes	The Clarkstown Building Department issues permits for the Town.
Emergency Management/Public Safety Department	Yes	Police Department
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	Yes	The Clarkstown Highway Department provides professional maintenance for all Town roads and related drainage systems, snow plowing, annual yard waste and fall leaf collection, while regularly reviewing each practice for a more efficient and cost-effective approach.
Mutual aid agreements	Yes	Rockland County OEM
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	No	-
Other	No	-

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
<i>Technical/Staffing Capability</i>		
Planners or engineers with knowledge of land development and land management practices	Yes	Planning/TDEC
Engineers or professionals trained in building or infrastructure construction practices	Yes	TDEC
Planners or engineers with an understanding of natural hazards	Yes	Planning/TDEC
Staff with expertise or training in benefit/cost analysis	Yes	TDEC
Professionals trained in conducting damage assessments	Yes	Building/TDEC
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	Yes	Planning/TDEC
Environmental scientist familiar with natural hazards	No	-
Surveyor(s)	Yes	TDEC
Emergency Manager	Yes	CPD
Grant writer(s)	Yes	CPD/Supervisors office
Resilience Officer	No	-
Other (this could include stormwater engineer, environmental specialist, etc.)	No	-

Fiscal Capability

Table 9.4-5 summarizes financial resources available to Town of Clarkstown.

Table 9.4-5. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use? (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	Yes
Capital improvements project funding	Yes
Authority to levy taxes for specific purposes	Yes
User fees for water, sewer, gas or electric service	Yes – Sewer
Impact fees for homebuyers or developers of new development/homes	Yes - Stormwater
Stormwater utility fee	Yes
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	No
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	No
Other federal or state Funding Programs	Yes
Open Space Acquisition funding programs	Yes
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	N/A

Education and Outreach Capability

Table 9.4-6 summarizes the education and outreach resources available to Town of Clarkstown.

Table 9.4-6. Education and Outreach Capabilities

Outreach Resources	Available? (Yes/No)	Comment:
Public information officer or communications office	Yes	Town Supervisor
Personnel skilled or trained in website development	Yes	Contracted
Hazard mitigation information available on your website	Yes	The Town of Clarkstown hosts a variety of information on its website for its residents. The Environmental Department has information regarding stormwater, recycling, and hazard mitigation; it also hosts a flood fact sheet from the NYS Emergency Management Office. The page on hazard mitigation details the reasons for hazard mitigation planning, and provides links to additional County, State, and Federal resources. Additional outreach mechanisms include emails, newsletters, Facebook and Twitter posts, community centers, and senior citizen meetings.
Social media for hazard mitigation education and outreach	Yes	Facebook, Twitter
Citizen boards or commissions that address issues related to hazard mitigation	No	-
Warning systems for hazard events	Yes	Rockland County has two alert notification systems (CodeRED and NYAlert) that the County manages and are accessible to the municipalities to send out messages. National Weather Service also sends out tornado, high wind, and flooding alerts regarding forecasted weather. The Town utilizes these systems and also sends out email blasts to residents as needed as well.
Natural disaster/safety programs in place for schools	No	-
Organizations that conduct outreach to socially vulnerable populations and underserved populations	No	-
Public outreach mechanisms / programs to inform citizens on natural hazards, risk, and ways to protect themselves during such events	No	-

Community Classifications

Table 9.4-7 summarizes classifications for community programs available to Town of Clarkstown.

Table 9.4-7. Community Classifications

Program	Participating? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	No	-	-
New York State Department of Environmental Conservation (NYSDEC) Climate Smart Community	Yes	None	5/16/2011
National Weather Service Storm Ready Certification	No	-	-
Firewise Communities classification	No	-	-

Program	Participating? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable
 — = Unavailable

Adaptive Capacity

Adaptive capacity is defined as “the ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or respond to consequences” (IPCC, 2022). Each jurisdiction has a unique combination of capabilities to adjust to, protect from, and withstand a future hazard event, future conditions, and changing risk. Table 9.4-8 summarizes the adaptive capacity for each identified hazard of concern and the Town’s capability to address related actions using the following classifications:

- Strong: Capacity exists and is in use.
- Moderate: Capacity might exist; but is not used or could use some improvement.
- Weak: Capacity does not exist or could use substantial improvement.

Table 9.4-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Disease Outbreak	Moderate
Drought	Moderate
Earthquake	Moderate
Extreme Temperature	Moderate
Flood	Moderate
Landslide	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

9.4.4 National Flood Insurance Program Compliance

This section provides specific information on the management and regulation of the regulatory floodplain, including current and future compliance with the National Flood Insurance Program (NFIP). The floodplain administrator listed in Table 9.4-1 is responsible for maintaining this information.

NFIP Summary

Table 9.4-9 summarizes the NFIP statistics for Town of Clarkstown.

Table 9.4-9. Town of Clarkstown NFIP Summary of Policy and Claim Statistics

# Policies	322
# Claims (Losses)	941
Total Loss Payments	\$9,346,749
# Repetitive Loss Properties (NFIP definition)	1
# Repetitive Loss Properties (FMA definition)	99
# Severe Repetitive Loss Properties	18
# Policies Within the 1 percent Annual Chance Flood Boundary	16

NFIP Definition of Repetitive Loss: The NFIP defines a repetitive loss property as any insurable building for which two or more claims of more than \$1,000 were paid by the NFIP within any rolling 10-year period since 1978.

FMA Definition of Repetitive Loss: FEMA’s Flood Mitigation Assistance (FMA) program defines a repetitive loss property as any insurable building that has incurred flood-related damage on two occasions, in which the cost of the repair, on average, equaled or exceeded 25 percent of the market value of the structure at the time of each such flood event.

Definition of Severe Repetitive Loss: A residential property covered under an NFIP flood insurance policy and: (a) That has at least four NFIP claim payments over \$5,000 each, and the cumulative amount of such claims payments exceeds \$20,000; or (b) For which at least two separate claims payments have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building. At least two of the claims must have occurred within any 10-year period, more than 10 days apart.

Source: FEMA, December 2023

Note: RL count may include properties also identified as SRL.

Flood Vulnerability Summary

Table 9.4-10 provides a summary of the NFIP program in Town of Clarkstown.

Table 9.4-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	Flooding occurs during almost every rain event. Rivers and streams can no longer accommodate flood waters.
Do you maintain a list of properties that have been damaged by flooding?	No
Do you maintain a list of property owners interested in flood mitigation?	No
How many homeowners and/or business owners are interested in mitigation (elevation or acquisition)?	Unknown
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what projects are underway.	No
How do you make Substantial Damage determinations?	No*
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	Unknown
How many properties have been mitigated (elevation or acquisition) in your jurisdiction? • If there are mitigation properties, how were the projects funded?	N/A

NFIP Topic	Comments
Do your flood hazard maps adequately address the flood risk within your jurisdiction? <ul style="list-style-type: none"> If not, state why. 	Yes
NFIP Compliance	
What local department is responsible for floodplain management?	DEFM
Are any certified floodplain managers on staff in your jurisdiction?	No
Do you have access to resources to determine possible future flooding conditions from climate change?	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? <ul style="list-style-type: none"> If so, what type of assistance/training is needed? 	No
Provide an explanation of NFIP administration services you provide (e.g., permit review, GIS, education/outreach, inspections, engineering capability)	Permit review, inspections
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	Chapter 146 of the Town code defines a substantial improvement as any reconstruction, rehabilitation, addition or other improvement of a structure, the cost of which or exceeds 50 percent of the market value of the structure before the start of construction of the improvement
What are the barriers to running an effective NFIP program in the community, if any?	N/A
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? <ul style="list-style-type: none"> If so, state the violations. 	No
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	May 8, 2024
What is the local law number or municipal code of your flood damage prevention ordinance?	Town Code Chapter 146, 2014
What is the date that your flood damage prevention ordinance was last amended?	2014
Does your floodplain management program meet or exceed minimum requirements? <ul style="list-style-type: none"> If exceeds, in what ways? 	Meets minimum requirements
Are there other local ordinances, plans or programs (e.g., site plan review) that support floodplain management and meeting the NFIP requirements? For instance, does the planning board or zoning board consider efforts to reduce flood risk when reviewing variances such as height restrictions?	Any development proposed within the SFHA requires a floodplain development permit to obtain site plan approval
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	Not currently

*Note: *The Town reported it does not have a process to make substantial damage determinations; however, during this planning process, it was confirmed that substantial damage determination provisions are established in both the adopted NFIP ordinance and adopted building code. This response has not been changed to accurately reflect the tools leveraged by the Town to mitigate risks.*

9.4.5 Growth/Development Trends

Understanding how past, current, and projected development patterns have or are likely to increase or decrease risk in hazard areas is a key component to appreciating a jurisdiction’s overall risk to its hazards of concern. Recent

and expected future development trends, including major residential/commercial development and major infrastructure development, are summarized in Table 9.4-11 through Table 9.4-13.

Table 9.4-11. Number of Building Permits for New Construction Issued Since the Previous HMP*

	New Construction Permits Issued			Total
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	
2019				
Total Permits	N/A – The Town does not issue building permits.			
Permits within SFHA				
2020				
Total Permits	N/A – The Town does not issue building permits.			
Permits within SFHA				
2021				
Total Permits	N/A – The Town does not issue building permits.			
Permits within SFHA				
2022				
Total Permits	N/A – The Town does not issue building permits.			
Permits within SFHA				
2023				
Total Permits	N/A – The Town does not issue building permits.			
Permits within SFHA				

* Only location-specific hazard zones or vulnerabilities identified.
 SFHA = Special Flood Hazard Area (1 percent flood event)

Table 9.4-12. Recent Major Development and Infrastructure from 2018 to Present

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
Highland Vista Estates	Residential	23 lot subdivision	33.20-2-8	None identified	Built
Little Tor Homes	Residential	43 lot subdivision	34.17-1-1	None identified	Built
Halmar International	Commercial	12,000 sq. ft. building addition	64.10-2-4	None identified	Built
Yellowstone Fields	Residential	7 lot subdivision	58.7-1-46	None identified	Built
Phillips Hill Farm	Residential	7 lot subdivision	42.08-2-16	None identified	Built
Greany Estates	Residential	9 lot subdivision	58.16-1-77	None identified	Built
Little Tor Plaza	Commercial	6,000 sq. ft. shopping mall	51.13-2-35	None identified	Built
Vincent’s Village	Senior/Low-income housing	4 buildings	63.11-2-13	None identified	Built
Hamptonburgh Distribution	Commercial	2,500 sq. ft. building	65.10-1-11	Flood: 1 percent chance	Built
Valley Cottage Fire House	Commercial	20,000 sq. ft. firehouse	59.7-2-3	None identified	Built
Regency Developers	Residential	4 lot subdivision	52.20-1-25	None identified	Built
Capital senior housing	Senior housing	80 units	43.7-1-2	None identified	Built
Mulberry Hill	Residential	6 lot subdivision	52.20-1-98	None identified	Built

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
Premier Storage	Commercial	60,000 sq. ft. building	35.19-2-7	None identified	Built
Chartwell Pharmaceuticals	Commercial	95,000 sq. ft. building	44.7-2-12	None identified	Built
L’Dor	Assisted living	41,000 sq. ft. building	50.12-1-4 & 5	None identified	Built
SMK Endicott	Residential	4 lot subdivision	44.11-2-81	None identified	Built
The Reserve	Senior Housing	127 units	51.19-2-19	None identified	Under construction
Thruway plaza	Commercial	3 buildings	57.19-1-10	None identified	Built
Jawonio	Commercial	50,000 sq. ft. building	43.5-1-9	None identified	Built
Vitane Pharmaceutical	Commercial	18,000 sq. ft. building addition	44.11-3-3	None identified	Under construction
Kennelly Square	senior housing	27 units	44.20-4-55	None identified	Under construction
101 S. Main St	Commercial	8,750 sq. ft. building	43.19-1-9	None identified	Under construction
Lincoln Logistics	Commercial	220,000 sq. ft. warehouse	52.15-1-82	None identified	Under construction
West Nyack Medical Building	Commercial	60,000 sq. ft. building	64.08-3-7.4	None identified	Built
Aptar	Commercial	30,456 sq. ft. building addition	35.20-1-9	None identified	Under construction
135 North Main St	Senior housing	47 units	43.15-1-15	None identified	Under construction

* Only location-specific hazard zones or vulnerabilities identified.

Table 9.4-13. Known or Anticipated Major Development and Infrastructure in the Next Five Years

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
No known or anticipated major development and infrastructure reported.					

* Only location-specific hazard zones or vulnerabilities identified.

9.4.6 Jurisdictional Risk Assessment

The hazard profiles in Volume I provide detailed information regarding each planning partner’s vulnerability to the identified hazards, including summaries of the Town of Clarkstown’s risk assessment results and data used to determine the hazard ranking. Key local risk assessment information is presented below.

Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Town are shown in Figure 9.4-1 through Figure 9.4-2. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps are provided only for hazards that can be identified clearly using mapping techniques and technologies and for which Clarkstown has significant exposure. The maps show the location of potential new development, where available.

Figure 9.4-1. Town of Clarkstown Flood and Dam Inundation Hazard Area Extent and Location

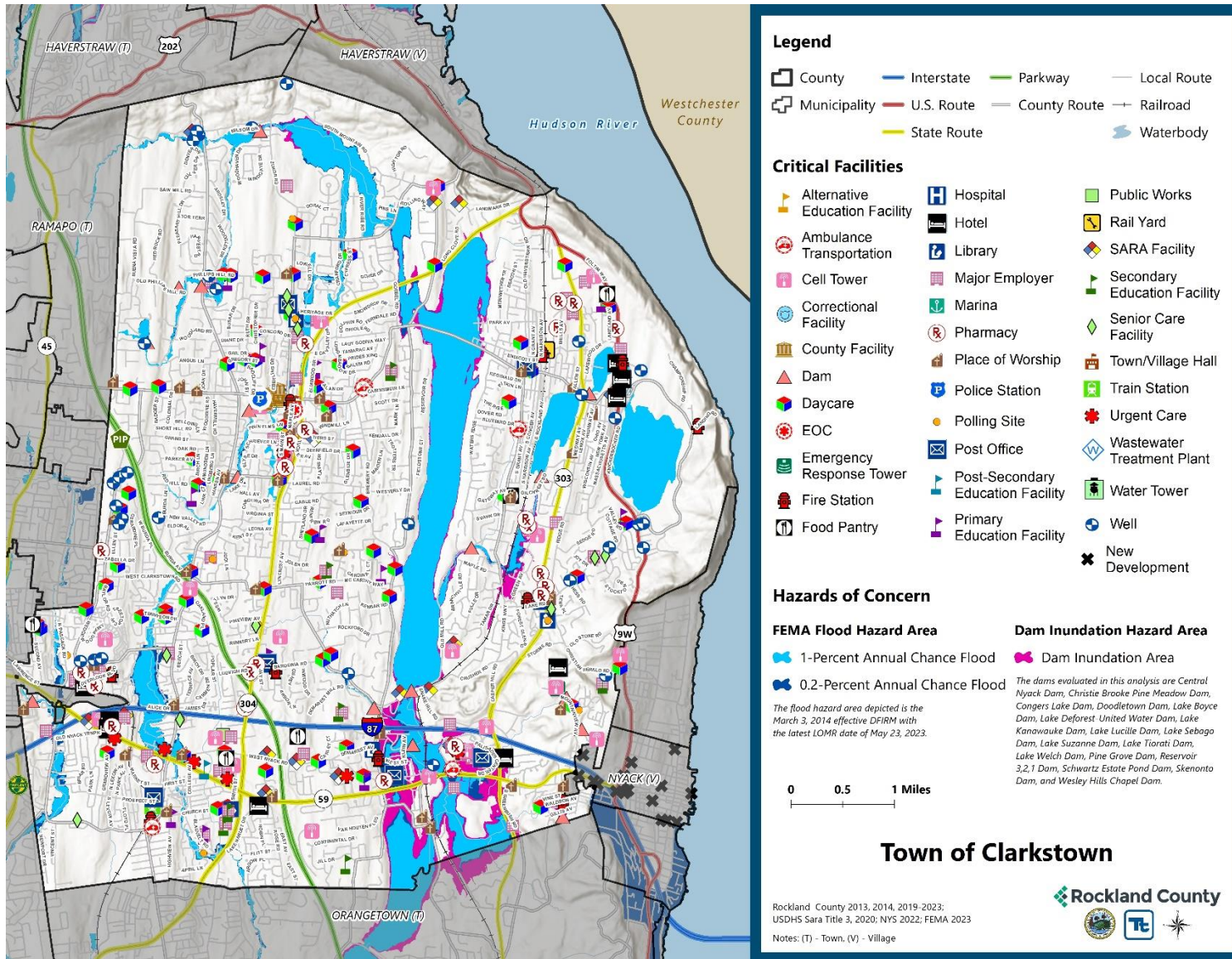
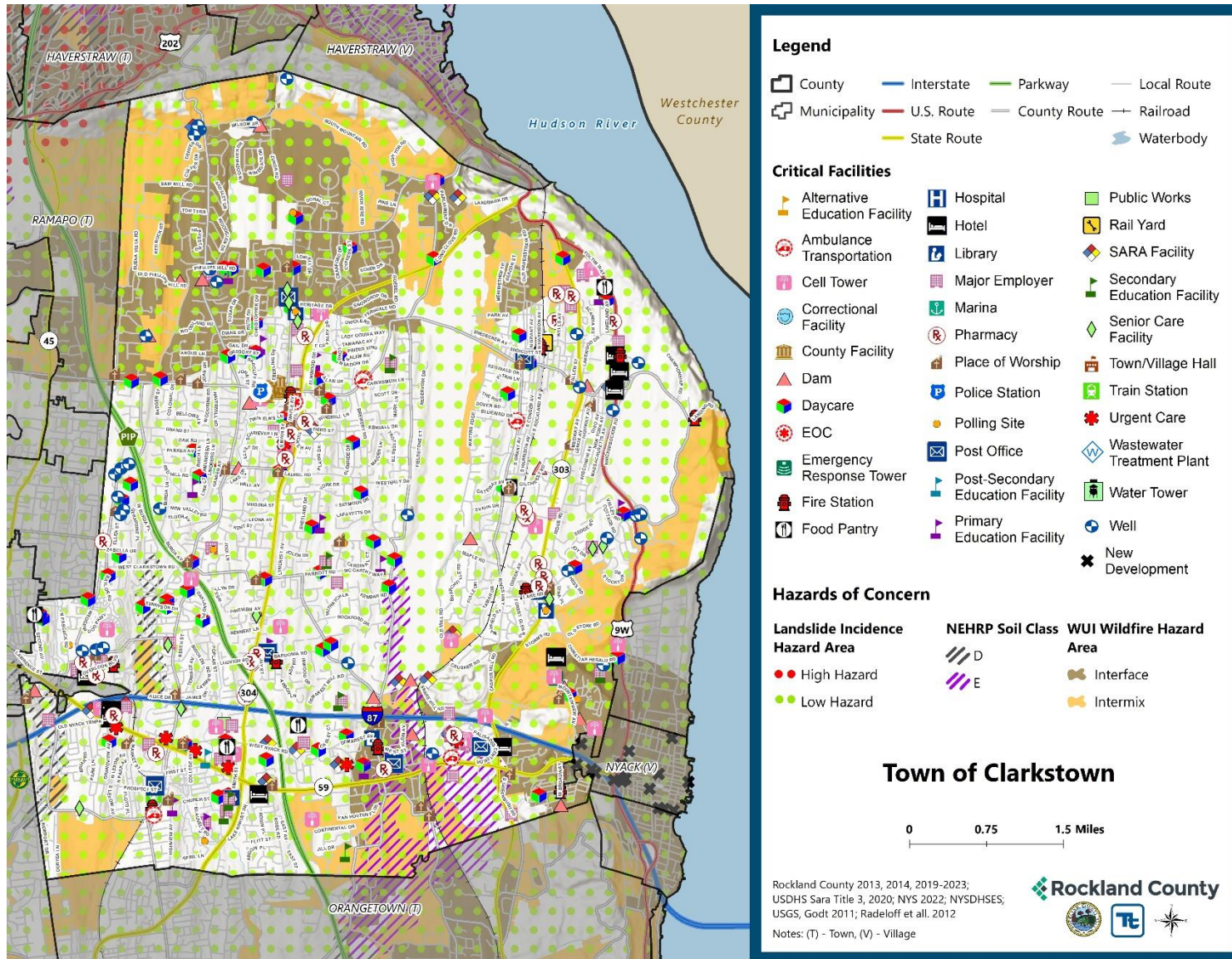


Figure 9.4-2. Town of Clarkstown Landslide, Earthquake, and Wildfire Hazard Area Extent and Location



Hazard Event History

The history of natural and non-natural hazard events in the Town of Clarkstown is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 9.4-14 provides details on loss and damage in the Town during hazard events since the last hazard mitigation plan update.

Table 9.4-14. Hazard Event History in the Town of Clarkstown

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Summary of Damage and Losses in the Town
January 20, 2020 - May 11, 2023	New York Covid-19 (3434-EM-NY, 4480-DR-NY)	Yes	The Covid-19 pandemic resulted in nationwide shutdowns, social distancing and masking requirements, and immunization efforts. Since the start of the pandemic, roughly 950 deaths have been reported in Rockland County. The federal Public Health Emergency expired in May 2023 but illness continues to occur as the virus shifts to becoming endemic.	-
April 13, 2020	High Winds		High winds across the county led to downed trees, power outages, closed roads,	\$200,000 in property damage
August 4, 2020	New York Tropical Storm Isaias (4567-DR-NY)	Yes	The center of Isaias passed about 65 miles west of New York City at 3 pm on August 4, 2020. Tropical storm force winds extended well east of the center of circulation. In addition, 1 to 3 inches of rainfall, highest west, were recorded across the county. These types of winds and rainfall across the area resulted in numerous trees and tree limbs being downed, power outages, damages to homes and automobiles, and disruption to transit.	-
August 21-24, 2021	New York Hurricane Henri (3565-EM-NY)	Yes	Rainfall from Tropical Storm Henri resulted in widespread flash flooding across southeastern New York, particularly portions of the Lower Hudson Valley. Rainfall totals generally ranged from 2-5 inches, with this rain coming in addition to the 2-5 inches that fell during the predecessor rainfall event the night before.	-

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Summary of Damage and Losses in the Town
September 1-3, 2021	New York Remnants of Hurricane Ida (3572-EM-NY, 4615-DR-NY)	Yes	Extremely heavy rainfall associated with the remnants of Hurricane Ida overspread southeast New York during the evening of September 1 and continued through the early morning hours of September 2. Rainfall totals ranged from 5-8 inches across much of the region, with much of that rain falling in just a few hours. This resulted in widespread catastrophic flash flooding.	-
July 9-10, 2023	Severe Storm, Flooding		Severe storms and flooding resulted in road closures, including portions of the Palisades Interstate Parkway, throughout Rockland County.	-

EM = Emergency Declaration (FEMA)
 FEMA = Federal Emergency Management Agency
 DR = Major Disaster Declaration (FEMA)
 N/A = Not applicable

Hazard Ranking and Vulnerabilities

The hazard profiles in Volume I have detailed information regarding each planning partner’s vulnerability to the identified hazards. The following summarizes presents key risk assessment results for the Town of Clarkstown.

Hazard Ranking

The participating jurisdictions have differing degrees of vulnerability to the hazards of concern, so each jurisdiction ranked its own degree of risk to each hazard. The community-specific hazard ranking is based on problems and impacts identified by the risk assessment presented in Volume I. The ranking process involves an assessment of the likelihood of occurrence for each hazard; the potential impacts of the hazard on people, property, and the economy; community capabilities to address the hazard; and changing future climate conditions. Clarkstown reviewed the County hazard ranking and individual results to assess the relative risk of the hazards of concern to the community. During the review of the hazard ranking, the Town indicated the following:

- The Town revised the Flood ranking from Medium to High because the area has been experiencing increasing in flooding, which is occurring in almost every rain event. Rivers and streams can no longer accommodate flood waters.

Table 9.4-15 shows Clarkstown’s final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 9.4-15. Hazard Ranking

Hazard	Rank
Dam Failure	Low
Disease Outbreak	Medium
Drought	Medium

Hazard	Rank
Earthquake	Low
Extreme Temperature	Medium
Flood	High
Landslide	Low
Severe Weather	High
Severe Winter Weather	High
Wildfire	Medium

Note: The scale is based on the hazard rankings established in Volume I, modified as appropriate based on review by the jurisdiction

Critical Facilities

Table 9.4-16 identifies critical facilities in the community located in the 1 percent and 0.2 percent annual chance floodplains.

Table 9.4-16. Critical Facilities Flood Vulnerability

Name	Type	Exposure		Addressed by Proposed Action	Already Protected to 0.2 percent Flood Level (describe protections)
		1 percent Event	0.2 percent Event		
Camp Jawonio Pond Dam	Dam	Yes	Yes	2024-Clarkstown-06	No
Congers Lake Dam	Dam	Yes	Yes	2024-Clarkstown-06	No
Heatons Pond Dam	Dam	Yes	Yes	2024-Clarkstown-06	No
Lake Deforest Dam	Dam	Yes	Yes	2024-Clarkstown-06	No
Lake Hyenga Dam	Dam	Yes	Yes	2024-Clarkstown-06	No
Lake Lucille Dam	Dam	Yes	Yes	2024-Clarkstown-06	No
New City Dam #1	Dam	Yes	Yes	2024-Clarkstown-06	No
Nob Hill Dam	Dam	Yes	Yes	2024-Clarkstown-06	No
Swartwout Lake Dam	Dam	Yes	Yes	2024-Clarkstown-06	No
Demarest Mill Creek Dam	Dam	Yes	Yes	2024-Clarkstown-06	No
Klein Avenue Detention Basin Dam	Dam	Yes	Yes	2024-Clarkstown-06	No
Jawonio, Inc.	Daycare	Yes	Yes	2024-Clarkstown-06	No
Howard Hanna Rand Realty	Major Employer	Yes	Yes	2024-Clarkstown-06	No
Shoprite	Major Employer	Yes	Yes	2024-Clarkstown-06	No
AFC Urgent Care Nanuet	Urgent Care	Yes	Yes	2024-Clarkstown-06	No
Candy Mountain Day Camp Well	Well	Yes	Yes	2024-Clarkstown-06	No
Nyack Village Water Co Intake	Well	Yes	Yes	2024-Clarkstown-06	No

Source: Rockland County 2023, FEMA

In addition to critical facilities that are exposed to flooding, the following high hazard dams are located in or could impact Town of Clarkstown:

- Central Nyack Dam

Identified Issues

After review of the Town of Clarkstown's hazard event history, hazard rankings, hazard location, and current capabilities, the Town of Clarkstown identified the following vulnerabilities within their community:

- The Town has identified many roadways, specifically County owned roads, that repeatedly flood due to an increase in precipitation from severe storms and severe winter storms. Many roadways, in particular County roads, repeatedly flood. Flood-prone roads can inhibit emergency response and evacuation during a flood or severe storm.
- The Town's floodplain ordinance was last updated in 2014 and may be less effective than current regulations require. The code needs to be updated to reflect current FEMA regulations and changes to the 2014 FEMA mapping to address flood and severe storm issues.
- The Town's floodplain management and ordinance enforcement staff are not Certified Floodplain Managers and flooding is becoming more common and frequent from severe storms and severe winter storms.
- The Town does not participate in CRS and could benefit from the associated incentives for flooding and severe storm events. The Town needs to identify whether or not joining the program will be beneficial to the community and its residents.
- There are properties in the Town that experience repetitive flood damage from severe storm events. Flood-vulnerable properties place an undue stress on the property owner and Town.
- There are multiple dams, major employers, daycares, urgent cares, wells, and other critical facilities in the Town that are in the floodplain and potentially vulnerable to flood events and dam failures as identified during the Rockland County HMP update. The Town does not have jurisdiction over all these structures to mitigate.
- Frequency and severity of flooding on Route 59 near Route 303 and the Palisades Mall has increased significantly within recent years as a result of more frequent and intense storm events. The road has been closed due to flooding from severe storm events nine times within the last 12 months. It is a main artery for commercial businesses in the Town and region and for police, fire and EMS and is traveled by 45,000 vehicles daily. The flooding is a result of backwatering of the Hackensack River and tributary NJ1-9-2-4 to the Hackensack.
- There are several properties near West Nyack Road and Klein Avenue that experience re-occurring flooding due to undersized culverts and an influx of water from severe storm events.
- There is flooding of several properties at Jeffrey Court, along the West Nyack west of the Hackensack River and south of Old Mill Road from severe storm events.
- Several residential properties near Hereford Lane in West Nyack experience re-occurring flooding due to an undersized culvert that overtops during severe storm events.
- The municipality does not have a Substantial Damage Management Ordinance, nor do they have a standard process in place when conducting substantial damage determinations. The Town has substantial damage determination provisions in both the adopted NFIP ordinance and adopted building code, but staff are unaware of these provisions and do not leverage them.

**This issue was identified as a specific area of concern based on resident response to the Rockland County Hazard Mitigation Citizen survey.*

9.4.7 Mitigation Strategy and Prioritization

This section discusses past mitigation actions and status, describes proposed hazard mitigation initiatives, and prioritizes actions to address over the next five years.

Past Mitigation Initiative Status

Table 9.4-17 indicates progress on the Town's mitigation strategy identified in the 2019 HMP. Actions that are still recommended but not completed or that are in progress are carried forward and combined with new actions as part of the mitigation strategy for this plan update. Previous actions that are now ongoing programs and capabilities are indicated as such and are presented in the capability assessment earlier in this annex.

Additional Mitigation Efforts

In addition to the mitigation initiatives completed in Table 9.4-17, Town of Clarkstown identified the following mitigation efforts completed since the last HMP:

- The Klein Avenue levee received FEMA HMGP funding and removed approximately 40 homes from the 100-year floodplain. Damage estimates submitted by homeowners for three storms (Hurricane Irene (2011) Hurricane Lee (2011) Hurricane Sandy (2012) which occurred prior to the levee project totaled \$1,773,412.00. There have been several storms which have occurred since the levee was completed which have generated as much or more rainfall than the three storms listed above. There has been no significant flood damage in the project area since the completion of the levee project.

Table 9.4-17. Status of Previous Mitigation Actions

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
CT-1	Klein Avenue Levee	Flooding	TDEC	<p>The height of the existing levee is not high enough to protect the area from increasing flood levels.</p> <p>Raise the height of the existing levee, Klein Ave.</p>	<p>1. Completed</p> <p>2. Received FEMA HMGP funding. Removed approximately 40 homes from the 100-year floodplain. Damage estimates submitted by homeowners for three storms (Hurricane Irene (2011) Hurricane Lee (2011) Hurricane Sandy (2012) which occurred prior to the levee project totaled \$1,773,412.00. There have been several storms which have occurred since the levee was completed which have generated as much or more rainfall than the three storms listed above. There has been no significant flood damage in the project area since the completion of the levee project.</p>	<p>1. Discontinue</p> <p>2. N/A</p> <p>3. Action completed.</p>
CT-2	Flood-prone Roadways Mitigation Solutions	Flooding	TDEC	<p>Many roadways, in particular County roads, repeatedly flood.</p> <p>Develop specific mitigation solutions for flood prone road systems (roads, bridges, intersections, drainage, etc.) under the leadership of County DPW.</p>	<p>1. In Progress</p> <p>2. N/A</p>	<p>1. Include</p> <p>2. Revised problem and solution descriptions.</p> <p>3. N/A</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
CT-3	Critical Facility Protections	All Hazards	CPD, OEM	<p>Critical facilities in the Town are old and may need additional or stronger protections from natural hazards.</p> <p>Determine the year built and level of protection for critical emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide some degree of protection from natural hazards and pursue potential mitigation opportunities to protect these sites as funding becomes available.</p>	<p>1. In Progress 2. N/A</p>	<p>1. Discontinue 2. N/A 3. This is an ongoing capability of the Town's, and this information can be revised or examined on an as-needed basis or when seeking grant funding.</p>
CT-4	Floodplain Management Ordinance FIRM Updates	Flooding	TDEC	<p>The flood damage prevention ordinance may not be consistent with the most updated FEMA FIRMs.</p> <p>Update/review floodplain management ordinances to be consistent with potential future new FIRMs.</p>	<p>1. In Progress 2. Draft updates completed and submitted to NYSDEC for review. Town Attorney to schedule public hearing to adopt new local law once review by NYSDEC is complete.</p>	<p>1. Include 2. Strategy updated to reflect current progress. 3. N/A</p>
CT-5	Certified Floodplain Managers	Flooding	TDEC	<p>There are no Certified Floodplain Managers (CFMs) on the Town.</p> <p>Recommend staff involved in floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs).</p>	<p>1. No Progress 2. N/A</p>	<p>1. Include 2. N/A 3. N/A</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
CT-6	Community Rating System (CRS)	Flooding	TDEC	The Town is subject to flooding and would like to consider joining the Community Rating System (CRS). Join the Community Rating System (CRS).	1. No Progress 2. N/A	1. Include 2. Revised problem and solution descriptions. 3. N/A
CT-7	NFIP Capabilities	Flooding, Severe Storm	FPA	The Town currently does not maintain a list of repetitive loss properties or of property owners who may be interested in flood mitigation measures. Identify and document repetitively flooded properties. Work with owners to explore mitigation opportunities for repetitively flooded properties, and if appropriate and feasible, carry out acquisition, relocation, elevation and floodproofing measures to protect these properties.	1. In Progress 2. N/A	1. Include 2. Revised descriptions. 3. N/A

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
CT-8	Natural Hazard Risk Maps	All Hazards	Town Board	<p>The Town does not have maps developed of all natural hazard risk areas in Town.</p> <p>Develop and maintain mapping of all natural hazard risk areas in the Town, FEMA delineated or otherwise, to support land use decision making (e.g., Planning Board, site plan review process)</p>	<p>1. In Progress</p> <p>2. Town GIS coordinator adds map data to the Town's GIS database as it becomes available from various sources.</p>	<p>1. Discontinue</p> <p>2. This is an ongoing capability of the Town's and can be addressed on an as-needed basis as data is updated or becomes available.</p> <p>3. N/A</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
CT-9	Critical Facilities in Floodplain	Flooding	Private Property Owners with Town support	<p>The following critical facilities are located in the floodplain and identified as vulnerable to the flood hazard:</p> <ul style="list-style-type: none"> • St. Anthony School (privately owned) • RPS Medic 5 (privately owned) • O&R West Nyack Operating Center (privately owned) • West Nyack Post Office (privately owned) • Pascack Wastewater Pump (owned by Rockland County Sewer District #1) <p>The Town does not have jurisdiction over these facilities to mitigate. The Town will notify the facility manager/operator of these critical facilities regarding their flood vulnerability as identified during the Rockland County HMP update and NYS' requirement to protect to the 500-year flood or worst-case scenario. The Town will provide the owners information regarding grant options for funding to implement their mitigation.</p>	<ol style="list-style-type: none"> 1. Include 2. N/A 	<ol style="list-style-type: none"> 1. Include 2. Updated information. 3. N/A

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
CT-10	Nauraushaun Stream Flood Mitigation	Flooding, Severe Storm	Drainage Agency, NYS DOT, Clarkstown	The Nauraushaun Stream runs near the Palisades Mall, causing the nearby roadways to flood. Coordinate with NYS regarding flooding at the Palisades Mall (Route 303 and 59).	1. In Progress 2. Town is in discussions with the US Army Corps. of Engineers regarding possible solutions to the flooding issue. Dredging of the Hackensack River to provide additional flow capacity has been discussed.	1. Include 2. Updated strategy description to reflect current progress. 3. N/A

Proposed Hazard Mitigation Initiatives for the HMP Update

Clarkstown participated in the mitigation strategy workshop for this HMP to identify appropriate actions to include in a local hazard mitigation strategy. Its comprehensive consideration of all possible activities to address hazards of concern included review of the following FEMA documents:

- FEMA 551 “Selecting Appropriate Mitigation Measures for Floodprone Structures” (March 2007)
- FEMA “Mitigation Ideas—A Resource for Reducing Risk to Natural Hazards” (January 2013).

The action worksheets included at the end of this annex list the mitigation actions that Clarktown would like to pursue in the future to reduce the effects of hazards. The actions are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in the Town’s priorities.

Table 9.4-18 indicates the range of proposed mitigation action categories. The four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table to further demonstrate the wide range of activities and mitigation measures selected.

Volume I identifies 14 evaluation criteria for prioritizing the mitigation actions. To assist with rating each mitigation action as high, medium, or low priority, a numeric rank is assigned (-1, 0, or 1) for each of the evaluation criteria. Table 2-19 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Table 9.4-18. Analysis of Mitigation Actions by Hazard and Category

Hazard	FEMA				CRS					
	LPR	SIP	NSP	EAP	PR	PP	PI	NR	SP	ES
Dam Failure	1	-	-	1	1	-	1	-	-	1
Disease Outbreak	-	-	-	1	-	-	1	-	-	-
Drought	1	-	-	1	1	-	1	-	-	1
Earthquake	1	-	-	1	1	-	1	-	-	1
Extreme Temperature	1	-	-	1	1	-	1	-	-	1
Flood	4	6	1	4	6	6	2	1	1	1
Landslide	1	-	-	-1	1	-	1	-	-	1
Severe Weather	4	6	1	4	6	6	2	1	1	1
Severe Winter Weather	1	-	-	1	1	-	1	-	-	1
Wildfire	1	-	-	1	1	-	1	-	-	1

Local Plans and Regulations (LPR)—These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.

Structure and Infrastructure Project (SIP)—These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct structures to reduce the impact of hazards.

Natural Systems Protection (NSP)—These are actions that minimize damage and losses and preserve or restore the functions of natural systems.

Education and Awareness Programs (EAP)—These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities

Preventative Measures (PR)—Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.

Property Protection (PP)—These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.

Public Information (PI)—Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.

Natural Resource Protection (NR)—Actions that minimize hazard loss and preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.

Structural Flood Control Projects (SP)—Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.

Emergency Services (ES)—Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities.

Table 9.4-19. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Other Community Objectives	Total	High / Medium / Low
2024-Clarkstown-01	Flood-prone Roadway Mitigation Solutions	1	1	1	0	0	0	1	0	1	1	0	0	1	0	7	Medium
2024-Clarkstown-02	Update Floodplain Management Ordinance	0	1	1	0	1	1	1	0	1	1	1	0	0	0	9	Medium
2024-Clarkstown-03	Certified Floodplain Manager Training	1	1	1	0	0	0	0	0	1	1	1	0	0	0	6	Low
2024-Clarkstown-04	Community Rating System (CRS)	1	1	1	0	0	0	0	0	1	1	0	0	0	0	5	Low
2024-Clarkstown-05	Document Flood-prone Properties	1	1	1	0	1	1	1	0	1	1	1	0	1	1	11	High
2024-Clarkstown-06	Critical Facilities in the Floodplain	1	1	1	0	1	0	1	1	1	1	1	0	1	1	11	High
2024-Clarkstown-07	Routes 59 and 303 Flood Mitigation	1	1	1	1	-1	-1	1	1	-1	1	1	1	1	1	11	High
2024-Clarkstown-08	West Nyack Road Culvert Replacements	1	1	1	1	1	0	1	0	1	1	1	1	1	1	12	High
2024-Clarkstown-09	Jeffrey Court Levee	1	1	0	1	1	0	1	0	0	1	1	1	0	1	9	Medium
2024-Clarkstown-10	Hereford Land Culvert Replacement	1	1	1	1	1	0	1	0	1	1	1	1	1	1	12	High
2024-Clarkstown-11	Substantial Damage Determination Training and Resources	1	1	1	0	1	1	0	0	1	1	1	1	1	1	11	High
Action 2024-ClarkstownT-12	Socially Vulnerable Populations Outreach	1	0	1	0	1	1	0	1	1	1	1	1	1	1	11	High

Note: Volume I, Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14).

Action 2024-Clarkstown-01. Flood-prone Roadway Mitigation Solutions

Action Name:	2024- Clarkstown -01. Flood-prone Roadway Mitigation Solutions	
Description of the Problem:	The Town has identified many roadways, specifically County owned roads, that repeatedly flood due to an increase in precipitation from severe storms and severe winter storms. Flood-prone roads can inhibit emergency response and evacuation during a flood or severe storm.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Town will develop specific mitigation solutions for flood-prone road systems (roads, bridges, intersections, drainage, etc.) under the leadership of County DPW, including but not limited to Cranford Dr, Klein Ave, Rt 59/Rt 303, Jeffrey Ct / Strawtown Rd, West Nyack Hamlet, Mountain Shadows Embankment, and South Mountain Rd steep roads.	
Lead Agency:	TDEC and DPW	
Supporting Agencies:	Rockland County Highway Department	
Estimated Cost:	High (> \$100,000)	
Potential Funding Sources:	Local, State, FEMA HMA, FMA, BRIC	
Implementation Timeline:	Short-term (< 5 years)	
Goals Met:	1, 2, 4	
Benefits:	This action allows for a reduction in flood events in the Town.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	N/A	
Impact on Critical Facilities/Lifelines:	This project aims to ensure the accessibility of roadways during flooding events and ensures access to emergency routes and critical facilities.	
Impact on Capabilities:	This action strengthens the Town’s capability to work with the County and improve roadways.	
Impact on Future Development:	This project can help mitigate potential damage along any affected roadways.	
Climate Change Considerations:	Climate change is leading to an increase in frequency and intensity of precipitation events, which leads to an increase in flooding.	
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium
		<input type="checkbox"/> Low
Alternatives	Action	Alternatives
	No action	Problem persists
	Raise or relocate roadways	Not feasible and does not reduce or eliminate vulnerability

Action 2024-Clarkstown-02. Update Floodplain Management Ordinance

Action Name:	2024- Clarkstown -02. Update Floodplain Management Ordinance		
Description of the Problem:	The Town’s floodplain ordinance was last updated in 2014 and may be less effective than current regulations require. The code needs to be updated to reflect current FEMA regulations and changes to the 2014 FEMA mapping to address flood and severe storm issues.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The Town will update flood damage prevention chapter of Town code using model Town law provided by NYSDEC.		
Lead Agency:	DEFM		
Supporting Agencies:	Town Attorney, Town Board		
Estimated Cost:	Low (< \$10,000)		
Potential Funding Sources:	Local		
Implementation Timeline:	Short-term (< 5 years)		
Goals Met:	1, 2, 3, 7		
Benefits:	The Town will have a stronger floodplain ordinance.		
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	N/A		
Impact on Critical Facilities/Lifelines:	This updated ordinance will protect the Town’s critical facilities better.		
Impact on Capabilities	A stronger ordinance will allow the Town to enforce more protective standards.		
Impact on Future Development:	Future development will have to follow the ordinance’s provisions.		
Climate Change Considerations:	A stronger ordinance may better prepare the Town for more intense and frequent flooding.		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Problem persists
	Update floodplain management ordinances with each new FIRM update		Time-consuming and not cost-effective

Action 2024-Clarkstown-03. Certified Floodplain Manager Training

Action Name:	2024- Clarkstown -03. Certified Floodplain Manager Training	
Description of the Problem:	The Town’s floodplain management and ordinance enforcement staff are not Certified Floodplain Managers and flooding is becoming more common and frequent from severe storms and severe winter storms.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Town will require staff involved in floodplain management and ordinance enforcement to become Certified Floodplain Managers. The Town will add/train sufficient members of their staff to adequately enforce NFIP regulations/floodplain management ordinances	
Lead Agency:	TDEC	
Supporting Agencies:	Building Department	
Estimated Cost:	Low (< \$10,000)	
Potential Funding Sources:	Operating Budget	
Implementation Timeline:	Long-term (> 5 years)	
Goals Met:	1, 2, 3, 7	
Benefits:	This action strengthens the Town’s ability to enforce floodplain management practices.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	N/A	
Impact on Critical Facilities/Lifelines:	This action will familiarize the Town staff with updated floodplain management practices which may benefit critical facilities and infrastructure that could be impacted by flooding. N/A	
Impact on Capabilities	This action will provide the Town with stronger capabilities to enforce and update its floodplain management regulations.	
Impact on Future Development:	N/A	
Climate Change Considerations:	Climate change is leading to an increase in frequency and intensity of precipitation events, which leads to an increase in flooding.	
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input type="checkbox"/> Medium
		<input checked="" type="checkbox"/> Low
Alternatives	Action	Evaluation
	No action	Current problem persists
	Require staff to take related courses, but not obtain CFM	Not nationally recognized program; potential to gain CRS points

Action 2024-ChestnutRidge-04. Community Rating System (CRS)

Action Name:	2024- ChestnutRidge-04. Community Rating Systems	
Description of the Problem:	The Town does not participate in CRS and could benefit from the associated incentives for flooding and severe storm events. The Town needs to identify whether or not joining the program will be beneficial to the community and its residents	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Town will support participation in the NFIP Community Rating System (CRS) program by attending CRS workshop(s) if offered within the county. The Town will join the CRS program if adequate resources to support long term participation can be dedicated. See following related Community Assistance Visit (CAV) initiative.	
Lead Agency:	Floodplain Administrator	
Supporting Agencies:	TDEC	
Estimated Cost:	Low (< \$10,000)	
Potential Funding Sources:	Operating Budget	
Implementation Timeline:	Long-term (> 5 years)	
Goals Met:	1, 2, 3, 7	
Benefits:	This action benefits the Town by being able to use CRS incentives and benefits to complete mitigation projects.	
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	N/A	
Impact on Critical Facilities/Lifelines:	CRS activities may better protect critical facilities and lifelines during flood events.	
Impact on Capabilities	Joining CRS may strengthen the Town’s technical knowledge and capability to enforce floodplain management best practices.	
Impact on Future Development:	Future development would have to follow any ordinance revisions that the Town enacts to gain CRS points.	
Climate Change Considerations:	The Town may adopt a stronger ordinance or enact mitigation projects for CRS points that may better prepare the Town for more intense and frequent flooding.	
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input type="checkbox"/> Medium
		<input checked="" type="checkbox"/> Low
Alternatives	Action	Evaluation
	No action	Current problem persists
	Develop local initiative to encourage higher standards than the NFIP	No flood insurance discounts or benefits for property owners

Action 2024-Clarkstown-05. Document Flood-prone Properties

Action Name:	2024- Clarkstown-05. Document Flood-prone Properties	
Description of the Problem:	There are properties in the Town that experience repetitive flood damage from severe storm events. Flood-vulnerable properties place an undue stress on the property owner and Town.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Town will work with owners located in and around the floodplain to explore mitigation opportunities for repetitively flooded properties, and if appropriate and feasible, carry out acquisition, relocation, elevation, and flood proofing measures to protect these properties.	
Lead Agency:	Floodplain Administrator	
Supporting Agencies:	Town Building Department	
Estimated Cost:	High (> \$100,000)	
Potential Funding Sources:	FEMA (HMGP, FMA, PDM), CDBG, NYS DHSES, Municipal Budget	
Implementation Timeline:	Short-term (<5 years)	
Goals Met:	1, 2, 3, 5, 7	
Benefits:	This action will reduce the amount of flood prone properties and will increase outreach amongst the Town.	
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	This project could make it easier for the County and Town to reach homeowners with vulnerable properties.	
Impact on Critical Facilities/Lifelines:	N/A	
Impact on Capabilities	Data will help the Town and County design future mitigation actions and outreach to vulnerable residents.	
Impact on Future Development:	This project could help reduce potential impact of flooding on nearby future development.	
Climate Change Considerations:	This project could help identify potential areas or properties for potential buyouts or floodplain restoration projects.	
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium
		<input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No action	Current problem persists
	Re-route source of flooding	Not feasible

Action 2024-Clarkstown-06. Critical Facilities in the Floodplain

Action Name:	2024- Clarkstown -06. Critical Facilities in the Floodplain	
Description of the Problem:	There are multiple dams, major employers, daycares, urgent cares, wells, and other critical facilities in the Town that are in the floodplain and potentially vulnerable to flood events and dam failures as identified during the Rockland County HMP update. The Town does not have jurisdiction over all these structures to mitigate.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Town will notify the private owners regarding these critical facilities' flood vulnerability identified during the Rockland County HMP update and NYS' requirement to protect to the 500-year flood or worst-case scenario. The Town will provide the owners information regarding grant options for funding to implement their mitigation. The private owners will need to determine the most cost effective and feasible mitigation action for these facilities.	
Lead Agency:	Town Engineer, Property Owners	
Supporting Agencies:	Building Department	
Estimated Cost:	High (> \$100,000)	
Potential Funding Sources:	FEMA HMA, FMA, BRIC	
Implementation Timeline:	Short-term (< 5 years)	
Goals Met:	1, 2	
Benefits:	This action strengthens the protection of the dam.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	N/A	
Impact on Critical Facilities/Lifelines:	This project aims to ensure the accessibility of roadways during flooding events and ensures access to emergency routes and critical facilities.	
Impact on Capabilities:	This action strengthens the Town’s capabilities in protecting critical infrastructure.	
Impact on Future Development:	This project can help mitigate potential damage along any affected roadways.	
Climate Change Considerations:	Climate change is leading to an increase in frequency and intensity of precipitation events, which leads to an increase in flooding.	
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium
		<input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No action	Problem persists
	Town mitigates only municipal-owned facilities	Does not reduce or eliminate risk for other facilities
	Town completes mitigation actions in inundation areas	Does not reduce or eliminate risk

Action 2024-Clarkstown-07. Routes 59 and 303 Flood Mitigation

Action Name:	2024-Clarkstown-07. Nauraushaun Stream Flood Mitigation		
Description of the Problem:	Frequency and severity of flooding on Route 59 near Route 303 and the Palisades Mall has increased significantly within recent years as a result of more frequent and intense storm events. The road has been closed due to flooding from severe storm events nine times within the last 12 months. It is a main artery for commercial businesses in the Town and region and for police, fire and EMS and is traveled by 45,000 vehicles daily. The flooding is a result of backwatering of the Hackensack River and tributary NJ1-9-2-4 to the Hackensack.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The Town has started discussions with the USACE to examine the possibility of dredging the Hackensack River upstream and downstream of Route 59 to remove accumulated sediment from the river and increase flow capacity. Mitigation will reduce frequency of flooding and road closures and will prevent/reduce delays by police, fire and EMS responding to emergency calls in the area. Mitigation will also benefit the 45,000 motorists who travel Route 59 daily.		
Lead Agency:	USACE		
Supporting Agencies:	NYS DEC, NYS DOT, Town		
Estimated Cost:	High (> \$100,000)		
Potential Funding Sources:	FEMA HMA, FMA, BRIC; NYS DOT		
Implementation Timeline:	Long-term (4-5 years)		
Goals Met:	1, 2, 4, 6		
Benefits:	This action lessens the closures amongst Route 59 and 303.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input checked="" type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input checked="" type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	N/A		
Impact on Critical Facilities/Lifelines:	Routes 303 and 59 would be less vulnerable to being inundated or damaged by a flood.		
Impact on Capabilities	This action strengthens the Town’s capabilities in protecting critical infrastructure		
Impact on Future Development:	Nearby development would be less vulnerable to flood damage.		
Climate Change Considerations:	The stream may be better able to withstand future and more intense flood events.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low

Alternatives	Action	Evaluation
	No action	Problem persists
	Move stream	Not feasible
	Move roadway	Not feasible

Action 2024-Clarkstown-08. West Nyack Road Culvert Replacements

Action Name:	2024-Clarkstown-08. West Nyack Road Culvert Replacements	
Description of the Problem:	There are several properties near West Nyack Road and Klein Avenue that experience re-occurring flooding due to undersized culverts and an influx of water from severe storm events.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Town will replace two existing undersized under West Nyack Road to reduce likelihood of flooding.	
Lead Agency:	DEFM	
Supporting Agencies:	-	
Estimated Cost:	High (\$750,000)	
Potential Funding Sources:	EPA	
Implementation Timeline:	Short-term (<1 year)	
Goals Met:	2, 4, 7	
Benefits:	This action lessens the flooding along West Nyack Road and Klein Avenue.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	N/A	
Impact on Critical Facilities/Lifelines:	This project would reduce the vulnerability of West Nyack Road and Klein Avenue being inundated during a flood event.	
Impact on Capabilities	This action strengthens the Town’s ability to reduce flooding.	
Impact on Future Development:	Future development in this area may be less likely to experience flood damage.	
Climate Change Considerations:	The project mitigates flooding conditions resulting from increased frequency and intensity of storm events.	

Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Problem persists
	Relocate roadways		Not feasible

Action 2024-Clarkstown-09. Jeffrey Court Levee

Action Name:	2024-Clarkstown-09. Jeffrey Court Levee	
Description of the Problem:	There is flooding of several properties at Jeffrey Court, along the West Nyack west of the Hackensack River and south of Old Mill Road from severe storm events	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	Construction of a levee between the impacted properties and the Hackensack River to the east.	
Lead Agency:	DEFM	
Supporting Agencies:	-	
Estimated Cost:	High (\$4,000,000)	
Potential Funding Sources:	FEMA HMA, FMA, BRIC	
Implementation Timeline:	Short-term (3 years)	
Goals Met:	1, 2,	
Benefits:	The Town will experience less flooding at Jeffrey Court, along the West Nyack west of the Hackensack River and, south of Old Mill Road.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	N/A	
Impact on Critical Facilities/Lifelines:	N/A	
Impact on Capabilities	This will enhance the flood reduction capabilities of the Town.	
Impact on Future Development:	The levee could protect future development in the inundation area.	
Climate Change Considerations:	Mitigates flooding conditions resulting from increased frequency and intensity of storm events.	

Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Problem persists
	Relocate properties		Not feasible

Action 2024-Clarkstown-10. Hereford Land Culvert Replacement

Action Name:	2024-Clarkstown-10. Hereford Land Culvert Replacement		
Description of the Problem:	Several residential properties near Hereford Lane in West Nyack experience re-occurring flooding due to an undersized culvert that overtops during severe storm events..		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	Replace the existing undersized on Hereford Lane to reduce likelihood of flooding.		
Lead Agency:	DEFM		
Supporting Agencies:	-		
Estimated Cost:	High (\$1,000,000)		
Potential Funding Sources:	State		
Implementation Timeline:	Short-term (<1 year)		
Goals Met:	2, 4, 7		
Benefits:	This action reduces flooding in the Town.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	N/A		
Impact on Critical Facilities/Lifelines:	This project would reduce the vulnerability of West Nyack Road and Klein Avenue being inundated during a flood event.		
Impact on Capabilities	This will enhance the flood reduction capabilities of the Town.		
Impact on Future Development:	Future development in this area may be less likely to experience flood damage.		

Climate Change Considerations:	The project mitigates flooding conditions resulting from increased frequency and intensity of storm events.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Problem persists
	Relocate roadway		Not feasible

Action 2024-Clarkstown-11. Substantial Damage Determination Training and Resources

Action Name:	Action 2024-Clarkstown-11. Substantial Damage Determination Training and Resources		
Description of the Problem:	The municipality does not have a Substantial Damage Management Ordinance, nor do they have a standard process in place when conducting substantial damage determinations following a dam/levee failure, drought, earthquake, extreme temperature event, flood, landslide, severe storm, severe winter storm, or wildfire. The Town has substantial damage determination provisions in both the adopted NFIP ordinance and adopted building code, but staff are unaware of these provisions and do not leverage them.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire	
Description of the Solution:	<p>The municipality will develop a Substantial Damage Management Plan, following the six-step planning process in 2021 Developing a Substantial Damage Management Plan (https://crsresources.org/files/500/developing_subst_damge_mgmt_plan.pdf). This plan will outline responsibilities for Substantial Damage determinations, determining market value, and permit approval processes following a disaster event.</p> <p>The municipality will also take part in workshops and training sessions offered by NYSDEC to train staff on the existing provisions in the NFIP ordinance and building code.</p>		
Lead Agency:	Floodplain Administrator		
Supporting Agencies:	Building Department, Planning Department, Engineering and Facilities Management Department		
Estimated Cost:	Low		
Potential Funding Sources:	Municipal budget		
Implementation Timeline:	Within 5 years to develop the plan; ongoing to maintain and update the plan		
Goals Met:	2, 5, 7		
Benefits:	This plan will provide a process in making Substantial Damage Determinations and allow the municipality to make these determinations and meet NFIP requirements more quickly.		
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	

CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Substantially damaged structures are required to be rebuilt to be compliance with current codes. Socially vulnerable populations may not have the financial means to make these improvements. This action may allow for the identification of potential resources to address substantial damages to structures owned by socially vulnerable populations.	
Impact on Critical Facilities/Lifelines:	A Substantial Damage Management Plan would include all critical facilities and lifelines in the municipality.	
Impact on Capabilities:	This action improves disaster recovery capabilities.	
Impact on Future Development:	A Substantial Damage Management Plan would include all existing, current, and future development in the municipality.	
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related disaster events. This action provides additional planning for disaster recovery.	
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No Action	No change
	Rely on state or federal resources following disaster events	Resources may not be available during major widespread events
	Establish MOUs with outside agencies to conduct Substantial Damage Determinations	A plan outlining responsibilities is still necessary to prevent missing important requirements

Action 2024-ClarkstownT-12. Socially Vulnerable Populations Outreach

Action Name:	2024- ClarkstownT-12. Socially Vulnerable Populations Outreach	
Description of the Problem:	The Town does not have any organizations that conduct outreach to socially vulnerable populations and underserved populations. During hazard events, the public may need to quickly access information about evacuation routes and shelters, or other steps they can take to protect themselves and their property. Residents may also need information about what services are available or offline due to flooding from intense precipitation, dam failure, severe storms, and snow melt; where to receive a vaccination or other healthcare in the event of a disease outbreak; public cooling or heat centers, such as libraries, during extreme temperatures; and evacuation areas for earthquakes, landslides, and wildfires. Socially vulnerable and underserved populations may rely on these types of services more heavily than other segments on the population. Furthermore, they may be less able to access these resources due to a variety of potential obstacles, such as mobility issues or language barriers.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	Create outreach materials, or utilize those from Rockland County, on hazard risks for socially vulnerable populations. Methods of distribution may include Town events, the Town newsletters, social media, the Town website, and having the materials on display for the public at Town libraries and offices.	
Lead Agency:	Town Administration	

Supporting Agencies:	Rockland County		
Estimated Cost:	Low		
Potential Funding Sources:	Town Budget, HMGP		
Implementation Timeline:	Within 3 years		
Goals Met:	1, 3, 5		
Benefits:	This action will ensure there is an individual working to identify and work with the socially vulnerable populations in the Town. Furthermore, this action will create opportunities to educate and inform populations on hazard risks.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	Socially vulnerable populations in the Town will become educated on hazards risks. The Town will identify an individual to identify and work with these populations to ensure the most up to date information is being shared.		
Impact on Critical Facilities/Lifelines:	Educating populations on hazard risk and how to mitigate the risks can decrease the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.		
Impact on Capabilities	This action would build upon the Town’s already existing public education and outreach program.		
Impact on Future Development:	Not applicable		
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related disaster events. This action will inform residents and business owners of how to reduce risk from hazards and how climate change may exacerbate those risks.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current methods remain the only ones used
	Rely on state or federal resources		Resources may be generalized and not specific to the risks in the Town
	Use only a few methods for distribution		Using only a few methods of distribution may hinder socially vulnerable populations from receiving the guidance

SECTION 9. JURISDICTIONAL ANNEXES

9.5 VILLAGE OF GRAND VIEW-ON-HUDSON

This jurisdictional annex to the Rockland County Hazard Mitigation Plan (HMP) provides information to assist public and private sectors in the Village of Grand View-on-Hudson with reducing losses from future hazard events. This annex is not guidance of what to do when a disaster occurs; its focus is on actions that can be implemented prior to a disaster to reduce or eliminate damage to property and people. The annex presents a general overview of the Village of Grand View-on-Hudson, describes who participated in the planning process, assesses the Village’s risk, vulnerability, and capabilities, and outlines a strategy for achieving a more resilient community.

9.5.1 Hazard Mitigation Planning Team

The Village of Grand View-on-Hudson identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Village departments. The Village Clerk represented the community on the Rockland County HMP Planning Partnership and Steering Committee and supported the local planning process requirements by securing input from persons with specific knowledge to enhance the plan. All departments were asked to contribute to the annex development through reviewing and contributing to the capability assessment, reporting on the status of previously identified actions, and participating in action identification and prioritization.

Table 9.5-1 summarizes Village officials who participated in the development of the annex and in what capacity. Additional documentation of the Village’s planning activities through Planning Partnership meetings is included in Volume I.

Table 9.5-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Julie Pagliaroli, Village Clerk Address: 151 River Road; Grand View-On-Hudson, NY 10960 Phone Number: 845 358 2919 Email: clerk@gvoh-ny.gov	Name/Title: Jonathan Bell, Trustee Address: 151 River Road; Grand View-On-Hudson, NY 10960 Phone Number: 845 358 2919 Email: clerk@gvoh-ny.gov
National Flood Insurance Program Floodplain Administrator	
Name/Title: Joseph Knizeski, Building Inspector Address: 151 River Road; Grand View-On-Hudson, NY 10960 Phone Number: 845 358 2919 Email: Building@gvoh-ny.gov	

9.5.2 Municipal Profile

The Village of Grand View-on-Hudson is located within the Town of Orangetown along the western border of Rockland County. The Village is bordered to the north by the Village of South Nyack, to the south by the Village of Piermont, to the east by the Town of Orangetown, and to the west by the Hudson River. The Village has a total area of 0.2 miles, of which, 0.2 square miles is land, and 0.0 square miles is water.

Research has shown that some populations are at greater risk from hazard events because of decreased resources or physical abilities. These populations can be more susceptible to hazard events based on a number of factors including their physical and financial ability to react or respond during a hazard, and the location and construction quality of their housing. Data from the 2017-2021 American Community Survey indicates that 5.4 percent of the population is five years of age or younger, 26.6 percent is 65 years of age or older, 0 percent is non-English speaking, 5.4 percent is below the poverty threshold, and 6.6 percent is considered disabled.

9.5.3 Jurisdictional Capability Assessment and Integration

The Village of Grand View-on-Hudson performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Volume I describes the components included in the capability assessment and their significance for hazard mitigation planning. The jurisdictional assessment for this annex includes analyses of the following:

- Planning and regulatory capabilities
- Development and permitting capabilities
- Administrative and technical capabilities
- Fiscal capabilities
- Education and outreach capabilities
- Classification under various community mitigation programs
- Adaptive capacity to withstand hazard events

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into day-to-day local government operations. As part of the hazard mitigation analysis, planning and /policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress toward plan integration. Development of an updated mitigation strategy provided an opportunity for the Village of Grand View-on-Hudson to identify opportunities for integration of mitigation concepts that can be incorporated into municipal procedures.

Planning, Legal, and Regulatory Capability and Integration

Table 9.5-2 summarizes the regulatory tools that are available to Village of Grand View-on-Hudson.

Table 9.5-2. Planning, Legal, and Regulatory Capability and Integration

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Codes, Ordinances, & Regulations				
Building Code	Yes	-	State, Local	Building Department
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
Before building takes place in the flood plain, our flood plain manager must issue a permit to do any construction in the floodplain.				
Zoning/Land Use Code	Yes	-	Local	Zoning Board of Adjustment
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The Zoning Code includes provisions to reduce erosion, landslides, and excessive stormwater runoff. It also has specific provisions for development in the floodplain.				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Subdivision Code	Yes	-	Local	Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The code includes provisions for determining lot sizes based on slope and contours, which mitigates the potential risk to erosion, landslides, and related hazards.				
Site Plan Code	Yes	Local Law 7/1988	State	Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Any development other than a single-family residence requires a special permit.				
Stormwater Management Code	Yes	Local Law 4/1989	State	Village Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The code has provisions for minimizing stormwater runoff and related pollution.				
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Real Estate Disclosure	Yes	New York State (NYS) mandate, Property Condition Disclosure Act, NY Code – Article 14 §460-467	State and local	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The NYS mandate requires sellers to disclose to potential buyers whether their property is located in a designated floodplain.				
Growth Management	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Environmental Protection Ordinance(s)	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Flood Damage Prevention Ordinance	Yes	Local Law 1/75	Federal, State, Local	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Zoning Code has provisions for minimizing the effects of flooding by limiting land disturbance and siting requirements.				
Wellhead Protection	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Emergency Management Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Climate Change Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other: Freeboard	Yes	State Code	State, Local	Village Engineer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> State mandated BFE+2 for single and two-family residential construction, BFE+1 for all other construction types				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Other: Cumulative Substantial Damage	Yes	Local Law 4/1989	Local	Building Department
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The building and zoning codes have provisions to minimize potential damage from hazards, including flooding, erosion, landslides, and other events.				
Planning Documents				
General/Comprehensive Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Capital Improvement Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Disaster Debris Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Floodplain Management or Watershed Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Stormwater Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Open Space Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Urban Water Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Habitat Conservation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Economic Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Community Wildfire Protection Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Community Forest Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Transportation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Agriculture Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Climate Action/ Resiliency/Sustainability Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Tourism Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Business/ Downtown Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other (for example NYRCR, etc.)	Yes	Steep Slopes – Local Law 7/1988	State, Local	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The law aims to reduce risk by providing oversight to development in areas with steep slopes, which may be more vulnerable to impacts from landslides and other hazards.				
Response/Recovery Planning				
Comprehensive Emergency Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Continuity of Operations Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Substantial Damage Response Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Threat & Hazard Identification & Risk Assessment	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Post-Disaster Recovery Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Public Health Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

Development and Permitting Capability

Table 9.5-3 summarizes the capabilities of Village of Grand View-on-Hudson to oversee and track development.

Table 9.5-3. Development and Permitting Capability

Indicate if your jurisdiction implements the following	Yes/No	Comment:
Do you issue development permits? <ul style="list-style-type: none"> If you issue development permits, what department is responsible? If you do not issue development permits, what is your process for tracking new development? 	Yes	Before building takes place in the floodplain, the Floodplain Manager must issue a permit to do any construction in the floodplain.
Are permits tracked by hazard area? (For example, floodplain development permits.)	No	-
Do you have a buildable land inventory? <ul style="list-style-type: none"> If you have a buildable land inventory, please describe 	No	-
Describe the level of build-out in your jurisdiction.	N/A	-

Administrative and Technical Capability

Table 9.5-4 summarizes potential staff and personnel resources available to Village of Grand View-on-Hudson and their current responsibilities that contribute to hazard mitigation.

Table 9.5-4. Administrative and Technical Capabilities

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
<i>Administrative Capability</i>		
Planning Board	Yes	Planning Board
Zoning Board of Adjustment	Yes	Zoning Board of Adjustment
Planning Department	No	-
Mitigation Planning Committee	No	-
Environmental Board/Commission	No	-
Open Space Board/Committee	No	-
Economic Development Commission/Committee	No	-
Public Works/Highway Department	No	-
Construction/Building/Code Enforcement Department	Yes	Building Department
Emergency Management/Public Safety Department	No	-
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	No	-
Mutual aid agreements	Yes	Piermont FD/Cornell Cooperative Extension
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	No	-
Other	No	-

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
<i>Technical/Staffing Capability</i>		
Planners or engineers with knowledge of land development and land management practices	Yes	Contract
Engineers or professionals trained in building or infrastructure construction practices	Yes	Contract
Planners or engineers with an understanding of natural hazards	Yes	Contract
Staff with expertise or training in benefit/cost analysis	No	-
Professionals trained in conducting damage assessments	No	-
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	No	-
Environmental scientist familiar with natural hazards	No	-
Surveyor(s)	No	-
Emergency Manager	No	-
Grant writer(s)	No	-
Resilience Officer	No	-
Other (this could include stormwater engineer, environmental specialist, etc.)	No	-

Fiscal Capability

Table 9.5-5 summarizes financial resources available to Village of Grand View-on-Hudson.

Table 9.5-5. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use? (Yes/No)
Community Development Block Grants (CDBG, CDBG-DR)	Yes, but not eligible
Capital improvements project funding	Yes
Authority to levy taxes for specific purposes	No
User fees for water, sewer, gas or electric service	No
Impact fees for homebuyers or developers of new development/homes	No
Stormwater utility fee	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	Yes
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	No
Other federal or state Funding Programs	Yes
Open Space Acquisition funding programs	Yes
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	No

Education and Outreach Capability

Table 9.5-6 summarizes the education and outreach resources available to Village of Grand View-on-Hudson.

Table 9.5-6. Education and Outreach Capabilities

Outreach Resources	Available? (Yes/No)	Comment:
Public information officer or communications office	No	-
Personnel skilled or trained in website development	No	-
Hazard mitigation information available on your website	No	-
Social media for hazard mitigation education and outreach	No	-
Citizen boards or commissions that address issues related to hazard mitigation	No	-
Warning systems for hazard events	Yes	The County utilizes NY-Alert and CodeRed (the backup to NY-Alert) for emergency notifications (all Towns and Villages have access to it).
Natural disaster/safety programs in place for schools	No	-
Organizations that conduct outreach to socially vulnerable populations and underserved populations		
Does the jurisdiction have any public outreach mechanisms / programs in place to inform citizens on natural hazards, risk, and ways to protect themselves during such events?	Yes	The Village provides residents with information regarding natural hazards and how to prepare for storms, including flooding, with the help of the Cornell Cooperative Extension.
Public outreach mechanisms / programs to inform citizens on natural hazards, risk, and ways to protect themselves during such events	No	-

Community Classifications

Table 9.5-7 summarizes classifications for community programs available to Village of Grand View-on-Hudson.

Table 9.5-7. Community Classifications

Program	Participating? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	No	-	-
New York State Department of Environmental Conservation (NYSDEC) Climate Smart Community	No	-	-
National Weather Service Storm Ready Certification	No	-	-
Firewise Communities classification	No	-	-
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable
 — = Unavailable

Adaptive Capacity

Adaptive capacity is defined as “the ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or respond to consequences” (IPCC, 2022). Each jurisdiction has a unique combination of capabilities to adjust to, protect from, and withstand a future hazard event, future

conditions, and changing risk. Table 9.5-8 summarizes the adaptive capacity for each identified hazard of concern and the Village’s capability to address related actions using the following classifications:

- Strong: Capacity exists and is in use.
- Moderate: Capacity might exist; but is not used or could use some improvement.
- Weak: Capacity does not exist or could use substantial improvement.

Table 9.5-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Disease Outbreak	Moderate
Drought	Moderate
Earthquake	Moderate
Extreme Temperature	Moderate
Flood	Moderate
Landslide	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

9.5.4 National Flood Insurance Program Compliance

This section provides specific information on the management and regulation of the regulatory floodplain, including current and future compliance with the National Flood Insurance Program (NFIP). The floodplain administrator listed in Table 9.5-1 is responsible for maintaining this information.

NFIP Summary

Table 9.5-9 summarizes the NFIP statistics for Village of Grand View-on-Hudson.

Table 9.5-9. Village of Grand View-on-Hudson NFIP Summary of Policy and Claim Statistics

# Policies	20
# Claims (Losses)	46
Total Loss Payments	\$1,296,282
# Repetitive Loss Properties (NFIP definition)	0
# Repetitive Loss Properties (FMA definition)	4
# Severe Repetitive Loss Properties	0
# Policies Within the 1 percent Annual Chance Flood Boundary	1

NFIP Definition of Repetitive Loss: The NFIP defines a repetitive loss property as any insurable building for which two or more claims of more than \$1,000 were paid by the NFIP within any rolling 10-year period since 1978.

FMA Definition of Repetitive Loss: FEMA’s Flood Mitigation Assistance (FMA) program defines a repetitive loss property as any insurable building that has incurred flood-related damage on two occasions, in which the cost of the repair, on average, equaled or exceeded 25 percent of the market value of the structure at the time of each such flood event.

Definition of Severe Repetitive Loss: A residential property covered under an NFIP flood insurance policy and: (a) That has at least four NFIP claim payments over \$5,000 each, and the cumulative amount of such claims payments exceeds \$20,000; or (b) For which at least two separate claims payments have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building. At least two of the claims must have occurred within any 10-year period, more than 10 days apart.

Source: FEMA, December 2023

Note: RL count may include properties also identified as SRL.

Flood Vulnerability Summary

Table 9.5-10 provides a summary of the NFIP program in Village of Grand View-on-Hudson.

Table 9.5-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	Our eastern border is the Hudson River. The westerly side of the Village is the downside of the mountain.
Do you maintain a list of properties that have been damaged by flooding?	No
Do you maintain a list of property owners interested in flood mitigation?	We do not maintain a list.
How many homeowners and/or business owners are interested in mitigation (elevation or acquisition)?	Unknown
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what projects are underway.	No
How do you make Substantial Damage determinations?	Through our Building Inspector who is also our Floodplain Management person and who also enforces New York State Codes regarding flood hazards
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	Unknown
How many properties have been mitigated (elevation or acquisition) in your jurisdiction? • If there are mitigation properties, how were the projects funded?	None
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If not, state why.	Unknown at this time.

NFIP Topic	Comments
NFIP Compliance	
What local department is responsible for floodplain management?	Yes, he is our Building Inspector, Code Enforcement Officer, Fire Inspector, and floodplain management officer.
Are any certified floodplain managers on staff in your jurisdiction?	No
Do you have access to resources to determine possible future flooding conditions from climate change?	No
Does your floodplain management staff need any assistance or training to support its floodplain management program? <ul style="list-style-type: none"> If so, what type of assistance/training is needed? 	Yes. Basic training and assistance with understanding the plan.
Provide an explanation of NFIP administration services you provide (e.g., permit review, GIS, education/outreach, inspections, engineering capability)	Permit review and inspections during construction.
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	By the percentage of improvement.
What are the barriers to running an effective NFIP program in the community, if any?	None
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? <ul style="list-style-type: none"> If so, state the violations. 	No
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	February 23, 2023
What is the local law number or municipal code of your flood damage prevention ordinance?	Local Law 2 of 2014.
What is the date that your flood damage prevention ordinance was last amended?	Last amended in 2014.
Does your floodplain management program meet or exceed minimum requirements? <ul style="list-style-type: none"> If exceeds, in what ways? 	It meets minimum requirements.
Are there other local ordinances, plans or programs (e.g., site plan review) that support floodplain management and meeting the NFIP requirements? For instance, does the planning board or zoning board consider efforts to reduce flood risk when reviewing variances such as height restrictions?	Through our code enforcement officer. Yes.
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	No.

9.5.5 Growth/Development Trends

Understanding how past, current, and projected development patterns have or are likely to increase or decrease risk in hazard areas is a key component to appreciating a jurisdiction’s overall risk to its hazards of concern. Recent and expected future development trends, including major residential/commercial development and major infrastructure development, are summarized in Table 9.5-11 through Table 9.5-13.

Table 9.5-11. Number of Building Permits for New Construction Issued Since the Previous HMP

	New Construction Permits Issued			Total
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	
2019				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2020				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2021				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2022				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2023				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0

SFHA = Special Flood Hazard Area (1 percent flood event)

Table 9.5-12. Recent Major Development and Infrastructure from 2018 to Present

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
No major development and infrastructure reported.					

* Only location-specific hazard zones or vulnerabilities identified.

Table 9.5-13. Known or Anticipated Major Development and Infrastructure in the Next Five Years

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
No anticipated major development and infrastructure reported.					

* Only location-specific hazard zones or vulnerabilities identified.

9.5.6 Jurisdictional Risk Assessment

The hazard profiles in Volume I provide detailed information regarding each planning partner’s vulnerability to the identified hazards, including summaries of the Village of Grand View-on-Hudson risk assessment results and data used to determine the hazard ranking. Key local risk assessment information is presented below.

Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Village are shown in Figure 9.5-1 through Figure 9.5-2. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps are provided only for hazards that can be identified clearly using mapping techniques and technologies and for which Grand View-on-Hudson has significant exposure. The maps show the location of potential new development, where available.

Figure 9.5-1. Village of Grand View-on-Hudson Flood and Dam Inundation Hazard Area Extent and Location

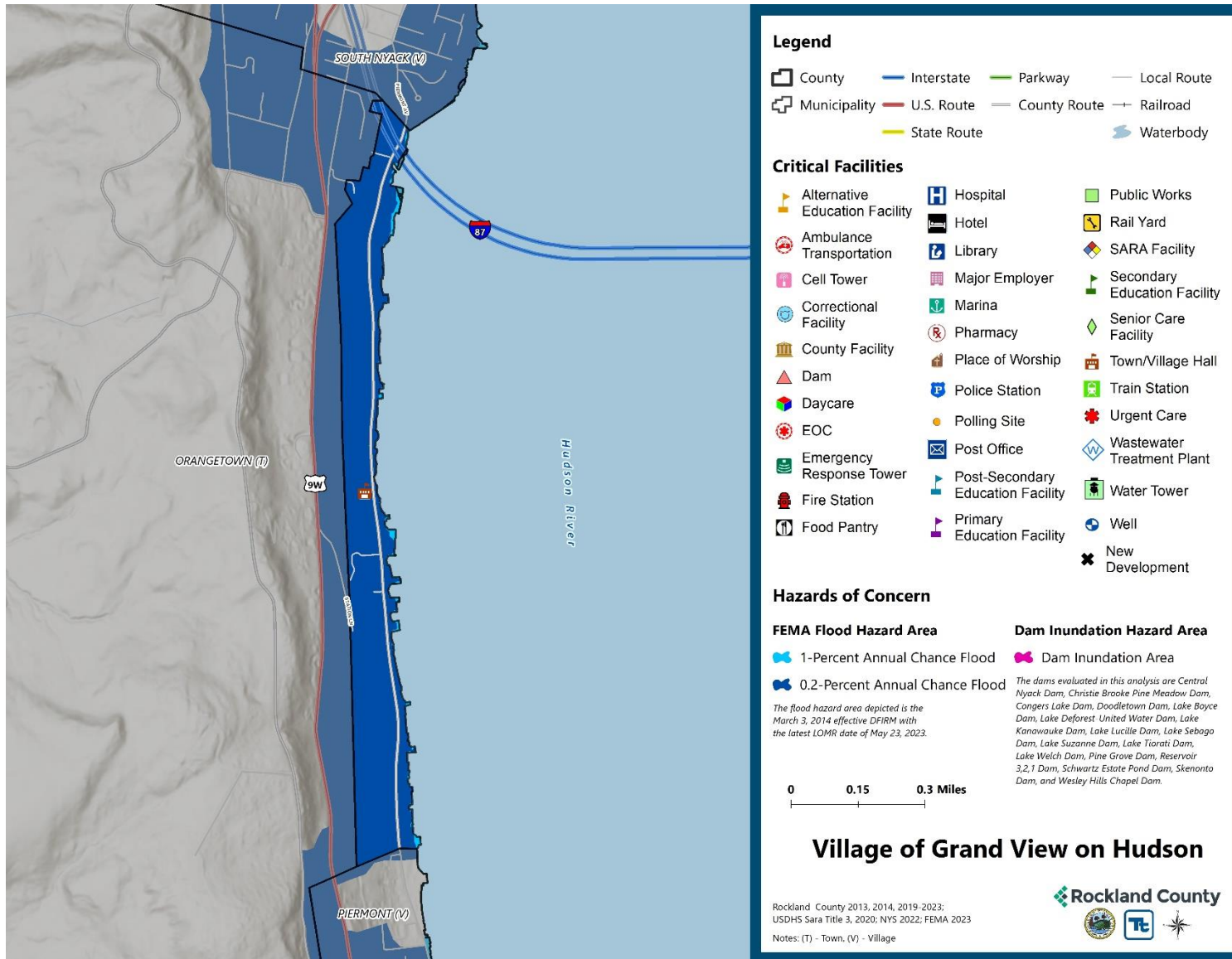
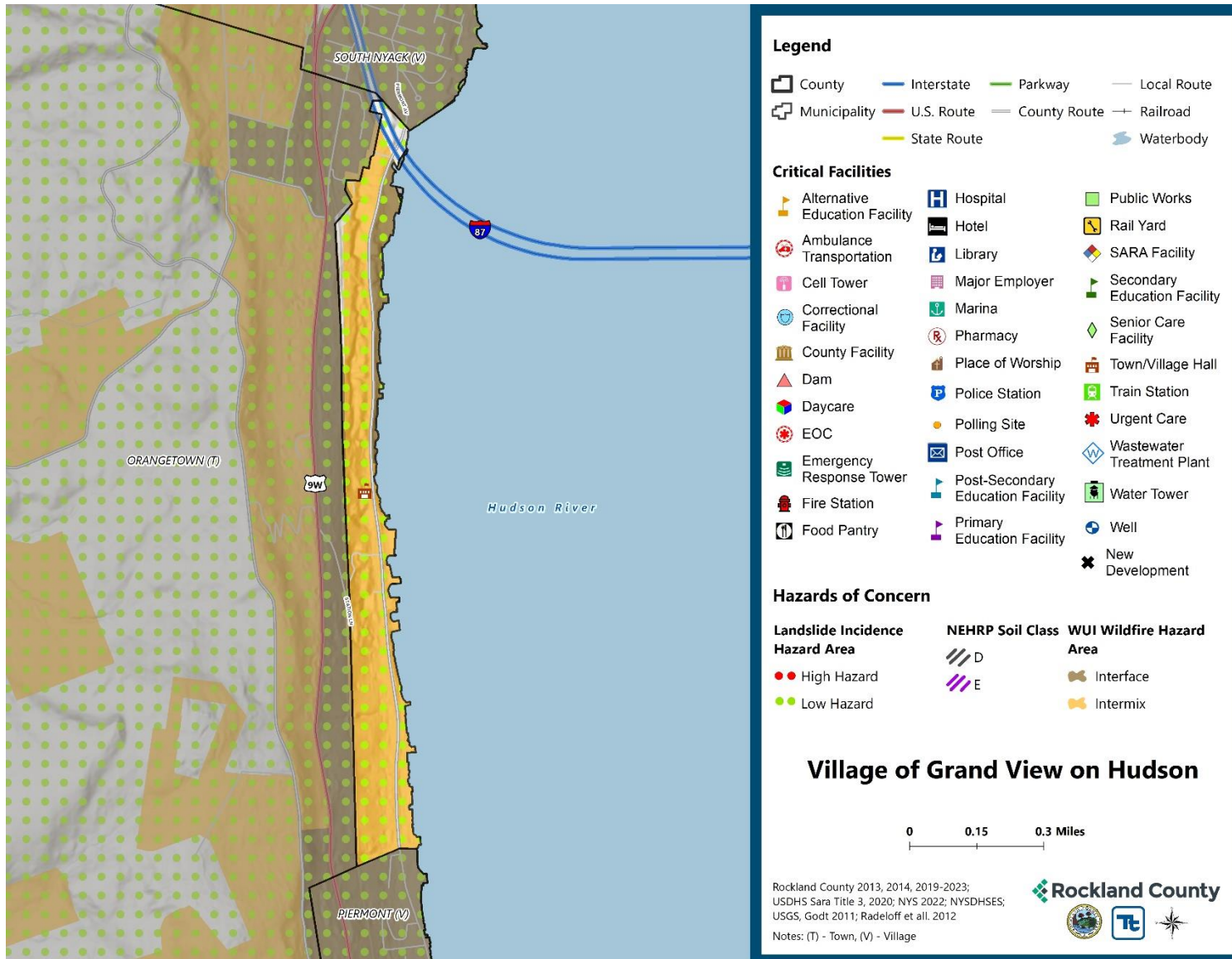


Figure 9.5-2. Village of Grand View-on-Hudson Landslide, Earthquake, and Wildfire Hazard Area Extent and Location



Hazard Event History

The history of natural and non-natural hazard events in the Village of Grand View-on-Hudson is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 9.5-14 provides details on loss and damage in the Village during hazard events since the last hazard mitigation plan update.

Table 9.5-14. Hazard Event History in the Village of Grand View-on-Hudson

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Summary of Damage and Losses in the Village
January 20, 2020 - May 11, 2023	New York Covid-19 (3434-EM-NY, 4480-DR-NY)	Yes	The Covid-19 pandemic resulted in nationwide shutdowns, social distancing and masking requirements, and immunization efforts. Since the start of the pandemic, roughly 950 deaths have been reported in Rockland County. The federal Public Health Emergency expired in May 2023 but illness continues to occur as the virus shifts to becoming endemic.	-
April 13, 2020	High Winds		High winds across the county led to downed trees, power outages, closed roads,	\$200,000 in property damage
August 4, 2020	New York Tropical Storm Isaias (4567-DR-NY)	Yes	The center of Isaias passed about 65 miles west of New York City at 3 pm on August 4, 2020. Tropical storm force winds extended well east of the center of circulation. In addition, 1 to 3 inches of rainfall, highest west, were recorded across the county. These types of winds and rainfall across the area resulted in numerous trees and tree limbs being downed, power outages, damages to homes and automobiles, and disruption to transit.	-
August 21-24, 2021	New York Hurricane Henri (3565-EM-NY)	Yes	Rainfall from Tropical Storm Henri resulted in widespread flash flooding across southeastern New York, particularly portions of the Lower Hudson Valley. Rainfall totals generally ranged from 2-5 inches, with this rain coming in addition to the 2-5 inches that fell during the predecessor rainfall event the night before.	-

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Summary of Damage and Losses in the Village
September 1-3, 2021	New York Remnants of Hurricane Ida (3572-EM-NY, 4615-DR-NY)	Yes	Extremely heavy rainfall associated with the remnants of Hurricane Ida overspread southeast New York during the evening of September 1 and continued through the early morning hours of September 2. Rainfall totals ranged from 5-8 inches across much of the region, with much of that rain falling in just a few hours. This resulted in widespread catastrophic flash flooding.	-
July 9-10, 2023	Severe Storm, Flooding		Severe storms and flooding resulted in road closures, including portions of the Palisades Interstate Parkway, throughout Rockland County.	-

EM = Emergency Declaration (FEMA)
 FEMA = Federal Emergency Management Agency
 DR = Major Disaster Declaration (FEMA)
 N/A = Not applicable

Hazard Ranking and Vulnerabilities

The hazard profiles in Volume I have detailed information regarding each planning partner’s vulnerability to the identified hazards. The following summarizes presents key risk assessment results for the Village of Grand View-on-Hudson.

Hazard Ranking

The participating jurisdictions have differing degrees of vulnerability to the hazards of concern, so each jurisdiction ranked its own degree of risk to each hazard. The community-specific hazard ranking is based on problems and impacts identified by the risk assessment presented in Volume I. The ranking process involves an assessment of the likelihood of occurrence for each hazard; the potential impacts of the hazard on people, property, and the economy; community capabilities to address the hazard; and changing future climate conditions. Grand View-on-Hudson reviewed the County hazard ranking and individual results to assess the relative risk of the hazards of concern to the community. During the review of the hazard ranking, the Village did not indicate any changes to the 2019 rankings for the plan update.

Table 9.5-15 shows Grand View-on-Hudson’s final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 9.5-15. Hazard Ranking

Hazard	Rank
Dam Failure	Low
Disease Outbreak	Medium
Drought	Medium
Earthquake	Low

Hazard	Rank
Extreme Temperature	Medium
Flood	Low
Landslide	Low
Severe Weather	High
Severe Winter Weather	High
Wildfire	Medium

Note: The scale is based on the hazard rankings established in Volume I, modified as appropriate based on review by the jurisdiction

Critical Facilities

Table 9.5-16 identifies critical facilities in the community located in the 1-percent and 0.2-percent annual chance floodplains.

Table 9.5-16. Critical Facilities Flood Vulnerability

Name	Type	Exposure		Addressed by Proposed Action	Already Protected to 0.2 percent Flood Level (describe protections)
		1 percent Event	0.2 percent Event		
The Village of Grand View-on-Hudson has no critical facilities located within the 1- or 0.2-percent Annual Chance Flood Hazard Area.					

Source: Rockland County 2023, FEMA

In addition to critical facilities that are exposed to flooding, there are no high hazard dams are located in or that could impact Village of Grand View-on-Hudson.

Identified Issues

After review of Village of Grand View-on-Hudson’s hazard event history, hazard rankings, hazard location, and current capabilities, the Village of Grand View-on-Hudson identified the following vulnerabilities within their community:

- Development around Hader Park has caused increased stormwater runoff that may lead to flooding and landslides. Drainage from uphill properties has become more of a problem with continued development of property along Route 9W and enforcement of tree and plant removal in an environmentally endangered area contributes to the problem as well as wildfire potential. There are properties in the Village that experience repetitive flood damage from severe storm events. Flood-vulnerable properties place an undue stress on the property owner and the Village.
- The Village works with various agencies, associations, and the public to implement monitoring and warning systems, however, the Village lacks an automated notification system for Village residents to increase awareness of hazard events and related impacts including dam/levee failure, disease outbreak, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, and wildfire.
- The Village’s floodplain management and ordinance enforcement staff are not Certified Floodplain Managers and flooding is becoming more common and frequent from severe storms and severe winter storms.

- The Village’s floodplain ordinance was last updated in 2014 and may be less effective than current regulations require. There are some facilities that were built before code updates and may be more vulnerable to damage from hazard event such as flood and severe storm events.
- The Village does not participate in CRS and could benefit from the associated incentives for flooding and severe storm events. The Village needs to identify whether or not joining the program will be beneficial to the community and its residents.

**This issue was identified as a specific area of concern based on resident response to the Rockland County Hazard Mitigation Citizen survey.*

9.5.7 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and prioritizes actions to address over the next five years.

Past Mitigation Initiative Status

Table 9.5-17 indicates progress on the Village’s mitigation strategy identified in the 2019 HMP. Actions that are still recommended but not completed or that are in progress are carried forward and combined with new actions as part of the mitigation strategy for this plan update. Previous actions that are now ongoing programs and capabilities are indicated as such and are presented in the capability assessment earlier in this annex.

Additional Mitigation Efforts

The Village did not identify any additional mitigation initiatives completed besides what is captured in Table 9.5-17.

Table 9.5-17. Status of Previous Mitigation Actions

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
GV-001	Hader Park Drainage Improvements	Flooding, Severe Storm	CPG member; Village Trustee	Development around the park has caused increased stormwater runoff and has created drainage issues in the park. Perform a study to determine actions to be taken to improve stormwater drainage at Hader Park.	1. No Progress 2. N/A	1. Include 2. The Village provided additional information on their work with the Town of Orangetown on these improvements. 3. N/A
GV-002	Online Hazard Information	All Hazards	CPG member; Village Trustee	Lack of public knowledge on the spatial extent of hazards. Provide GIS hazard information online for residents and others in the community to view the Village's hazard vulnerabilities.	1. Ongoing Capability 2. N/A	1. Discontinue 2. N/A 3. The Village can update this information on an as-needed basis and with support from the County.
GV-003	Public Workshops	All Hazards	CPG member; Village Trustee	The public may not be aware of the Village's hazard vulnerabilities and planning/zoning decisions. Hold periodic workshops regarding zoning and planning issues that arise regarding natural hazards and hazard mitigation.	1. Ongoing Capability 2. N/A	1. Discontinue 2. N/A 3. The Village can host these workshops on an as-needed basis.

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
GV-004	NFIP Capabilities	Flooding, Severe Storm	Each jurisdictional CPG member	<p>Repetitively flooded properties place an undue stress on the property owner and village and efforts should be made to mitigate them.</p> <p>Identify and document repetitively flooded properties. Work with owners to explore mitigation opportunities for repetitively flooded properties, and if appropriate and feasible, carry out acquisition, relocation, elevation and floodproofing measures to protect these properties.</p>	<p>1. No Progress 2. N/A</p>	<p>1. Include 2. N/A 3. N/A</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
GV-005	Critical Facility Protections	All Hazards	Building Dept. or outside engineer	<p>Critical facilities in the Village are old and may need additional or stronger protections from natural hazards.</p> <p>The Village will work with the property owners to determine the year built and level of protection for critical emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide some degree of protection from natural hazards and pursue potential mitigation opportunities to protect these sites to the 500-year or worst-case scenario as funding becomes available.</p>	<p>1. No Progress 2. N/A</p>	<p>1. Discontinue 2. N/A 3. This capability is leveraged on an as-needed basis when considering grant funding.</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
GV-006	Emergency Warning System	All Hazards	Village Code, Planning Board and Building Dept.	<p>The current emergency response plans do not implement monitoring or warning systems.</p> <p>Review existing emergency response plans for enhancement opportunities: work with social support agencies, homeowners' associations, and general public to develop and implement monitoring and warning systems focused on vulnerable populations and provision of adequate shelter facilities.</p>	<p>1. No Progress 2. N/A</p>	<p>1. Include 2. N/A 3. N/A</p>
GV-007	Floodplain Management Ordinance FIRM Updates	Flooding	Village Code, Planning Board and Building Dept.	<p>Ensure all staff members are properly trained will allow for the Village to effectively enforce NFIP regulations/floodplain management ordinances.</p> <p>Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances</p>	<p>1. No Progress 2. N/A</p>	<p>1. Include 2. Consolidate with old actions (GV-009) into single new action (2024-GrandView-04). 3. N/A</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
GV-008	Floodplain Management Ordinance	Flooding	Building Dept.	Current floodplain management ordinance could be out of date and less effective than current regulations require. Update/review floodplain management ordinances to be consistent with potential future new FIRMs.	1. No Progress 2. N/A	1. Include 2. N/A 3. N/A
GV-009	Certified Floodplain Managers	Flooding	Outside Engineer	Future FIRMs could show the need for a more stringent flood ordinance if risk has increased. Require staff involved in floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs).	1. No Progress 2. N/A	1. Include 2. Consolidate with old actions (GV-007) into single new action (2024-GrandView-04). 3. N/A
GV-010	Community Rating System (CRS)	Flooding	Building Dept.	The Village is not in the CRS program. Join the Community Rating System (CRS).	1. No Progress 2. N/A	1. Include 2. Determine the costs and benefits of joining the CRS program. 3. N/A
GV-011	Village Hall Flood Mitigation	Flooding, Severe Storm	Village Board	Village Hall located in floodplain and was destroyed during Hurricane Sandy. Replacement/elevation of Village Hall outside the floodplain or mitigate to the 500-year flood event.	1. In Progress 2. N/A	1. Discontinue 2. N/A 3. The Village has secured funding to rebuild the historic structure, and reconstruction is currently underway.

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
GV-012	Natural Hazard Risk Map Database	All Hazards	Village Engineer; Planning Board	<p>Spatial database of all natural hazard risk areas in the Village will allow land use decision makers to plan safe and resilient communities and developments.</p> <p>Develop and maintain mapping of all natural hazard risk areas in the Village, FEMA delineated or otherwise, to support land use decision making (e.g., Planning Board, site plan review process).</p>	<p>1. No Progress 2. N/A</p>	<p>1. Discontinue 2. N/A 3. The Village can provide this information and upload it to its website on an as-needed basis and with support from the County.</p>

Proposed Hazard Mitigation Initiatives for the HMP Update

Grand View-on-Hudson participated in the mitigation strategy workshop for this HMP to identify appropriate actions to include in a local hazard mitigation strategy. Its comprehensive consideration of all possible activities to address hazards of concern included review of the following FEMA documents:

- FEMA 551 “Selecting Appropriate Mitigation Measures for Floodprone Structures” (March 2007)
- FEMA “Mitigation Ideas—A Resource for Reducing Risk to Natural Hazards” (January 2013).

The action worksheets included at the end of this annex list the mitigation actions that Grand View-on-Hudson would like to pursue in the future to reduce the effects of hazards. The actions are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in the Village’s priorities.

Table 9.5-18 indicates the range of proposed mitigation action categories. The four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table to further demonstrate the wide range of activities and mitigation measures selected.

Volume I identifies 14 evaluation criteria for prioritizing the mitigation actions. To assist with rating each mitigation action as high, medium, or low priority, a numeric rank is assigned (-1, 0, or 1) for each of the evaluation criteria. Table 9.5-19 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Table 9.5-18. Analysis of Mitigation Actions by Hazard and Category

Hazard	Actions That Address the Hazard, by Action Category									
	FEMA				CRS					
	LPR	SIP	NSP	EAP	PR	PP	PI	NR	SP	ES
Dam Failure	-	-	-	1	-	-	1	-	-	1
Disease Outbreak	-	-	-	1	-	-	1	-	-	1
Drought	-	-	-	1	-	-	1	-	-	1
Earthquake	-	-	-	1	-	-	1	-	-	1
Extreme Temperature	-	-	-	1	-	-	1	-	-	1
Flood	5	1	1	2	5	2	2	1	1	1
Landslide	1	1	1	1	2	2	2	1	1	1
Severe Weather	4	1	1	2	4	2	2	1	1	1
Severe Winter Weather	1	-	-	1	1	-	1	-	-	1
Wildfire	1	1	1	1	1	1	1	1	1	1

Local Plans and Regulations (LPR)—These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.

Structure and Infrastructure Project (SIP)—These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct structures to reduce the impact of hazards.

Natural Systems Protection (NSP)—These are actions that minimize damage and losses and preserve or restore the functions of natural systems.

Education and Awareness Programs (EAP)—These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities

Preventative Measures (PR)—Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.

Property Protection (PP)—These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.

Public Information (PI)—Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.

Natural Resource Protection (NR)—Actions that minimize hazard loss and preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.

Structural Flood Control Projects (SP)—Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.

Emergency Services (ES)—Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities

Table 9.5-19. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Other Community Objectives	Total	High / Medium / Low
2024-GrandViewV-01	Hader Park Drainage Improvements	0	1	1	1	1	0	1	0	0	1	1	1	0	1	10	Medium
2024-GrandViewV-02	Document Flood-prone Properties	1	1	1	0	1	1	0	1	1	1	0	0	1	0	9	Medium
2024-GrandViewV-03	Automated Notification System	1	1	1	0	0	0	0	1	1	1	0	0	1	1	8	Medium
2024-GrandViewV-04	Certified Floodplain Manager Training	1	1	1	0	0	0	0	1	1	1	1	1	1	1	10	Medium
2024-GrandViewV-05	Update Floodplain Management Ordinances	1	1	1	0	1	0	0	1	1	1	1	1	1	1	11	High
2024-GrandViewV-06	Community Rating System (CRS)	1	1	1	0	0	1	1	0	1	1	1	0	1	0	9	Medium

Note: Volume I, Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14).

Action 2024-GrandViewV-01. Hader Park Drainage Improvements

Action Name:	2024-GrandViewV-01. Hader Park Drainage Improvements		
Description of the Problem:	Development around Hader Park has caused increased stormwater runoff that may lead to flooding and landslides. Drainage from uphill properties has become more of a problem with continued development of property along Route 9W and enforcement of tree and plant removal in an environmentally endangered area contributes to the problem as well as wildfire potential.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire	
Description of the Solution:	The Village will cooperate with the Town of Orangetown to enforce environmental regulations for tree and removal of vegetation to start with improvement of drainage along the Hader Park property.		
Lead Agency:	Village Board of Trustees		
Supporting Agencies:	Town of Orangetown, State of New York Highway (Route 9W drainage)		
Estimated Cost:	High (\$120,000)		
Potential Funding Sources:	State, Local		
Implementation Timeline:	Mid-term (2 to 3 years)		
Goals Met:	2, 7		
Benefits:	This action strengthens the Village’s capability to handle flood and wildfire issues.		
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input checked="" type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input checked="" type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	N/A		
Impact on Critical Facilities/Lifelines:	This action allows for critical facility development along Route 9W.		
Impact on Capabilities	this action strengthens the Village’s ability to handle increasing flooding and wildfire issues.		
Impact on Future Development:	This action allows for future development along Route 9W		
Climate Change Considerations:	Climate change is leading to an increase in frequency and intensity of precipitation events.		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem persists
	Relocate Park		Not feasible

Action 2024-GrandViewV-02. Document Flood-prone Properties

Action Name:	2024-GrandViewV-02. Document Flood-prone Properties	
Description of the Problem:	There are properties in the Village that experience repetitive flood damage from severe storm events. Flood-vulnerable properties place an undue stress on the property owner and the Village.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Village will work with owners located in and around the floodplain to explore mitigation opportunities for repetitively flooded properties, and if appropriate and feasible, carry out acquisition, relocation, elevation, and flood proofing measures to protect these properties.	
Lead Agency:	Village Board of Trustees	
Supporting Agencies:	CPG members	
Estimated Cost:	Medium (\$10,000 to \$100,000)	
Potential Funding Sources:	FEMA (HMGP, FMA, PDM), CDBG, NYS DHSES, Municipal Budget	
Implementation Timeline:	Short-term (<5 years)	
Goals Met:	1, 2, 3, 5, 7	
Benefits:	This action will reduce the amount of flood prone properties and will increase outreach amongst the Village.	
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	This project could make it easier for the County and Village to reach homeowners with vulnerable properties.	
Impact on Critical Facilities/Lifelines:	N/A	
Impact on Capabilities	Data will help village and county design future mitigation actions and outreach to vulnerable residents.	
Impact on Future Development:	This project could help reduce potential impact of flooding on nearby future development.	
Climate Change Considerations:	This project could help identify potential areas or properties for potential buyouts or floodplain restoration projects.	
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium
		<input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No action	Current problem persists
	Identify repetitive loss areas	Not action-driven and does not reduce or eliminate vulnerability

Action 2024-GrandViewV-03. Automated Notification System

Action Name:	2024-GrandViewV-03. Automated Notification System	
Description of the Problem:	The Village works with various agencies, associations, and the public to implement monitoring and warning systems, however, the Village lacks an automated notification system for Village residents to increase awareness of hazard events and related impacts. During hazard events, the public may need to quickly access information about evacuation routes and shelters, or other steps they can take to protect themselves, such as avoiding flooded or icy roads during a flood, severe storm, dam failure, or severe winter storm. Residents may also need information about what services are available, offline, or restricted due to drought or flooding from intense precipitation, dam failure, severe storms, and snow melt; public cooling or heat centers, such as libraries, during extreme temperatures; and evacuation areas for earthquakes, landslides, and wildfires.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	The Village will review existing emergency response plans for enhancement opportunities: work with social support agencies, homeowners associations and general public to develop and implement monitoring and warning systems focused on vulnerable populations and provision of adequate shelter facilities. Consider procuring an automated telephone notification system for Village residents.	
Lead Agency:	Village Planning Department	
Supporting Agencies:	Rockland County Office of Emergency Services	
Estimated Cost:	Medium (\$10,000 to \$100,000)	
Potential Funding Sources:	State, Local	
Implementation Timeline:	Short-term (<5 years)	
Goals Met:	1, 2, 3, 4, 5, 6, 7	
Benefits:	This action strengthens the Village warning times.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	This system could make it easier for populations with limited internet access or technical capabilities to become aware of potential hazard events or warnings.	
Impact on Critical Facilities/Lifelines:	This project could notify residents resources available to them and/or advise them to stay off roads during hazard events, reducing congestion for emergency vehicles.	
Impact on Capabilities	This project would improve the Village’s capabilities to prepare and respond to emergencies.	
Impact on Future Development:	N/A	

Climate Change Considerations:	Climate change is leading to an increase in frequency and intensity of precipitation events, which leads to an increase in flooding.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives Action Name:	Action		Alternatives
	No action		Current problem persists
	Automated email system		Not feasible

Action 2024-GrandViewV-04. Certified Floodplain Manager Training

Action Name:	2024-GrandViewV-06. Certified Floodplain Manager Training		
Description of the Problem:	The Village’s floodplain management and ordinance enforcement staff are not Certified Floodplain Managers and flooding is becoming more common and frequent from severe storms and severe winter storms.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The Village will require staff involved in floodplain management and ordinance enforcement to become Certified Floodplain Managers. The Village will add/train sufficient members of their staff to adequately enforce NFIP regulations/floodplain management ordinances		
Lead Agency:	Village		
Supporting Agencies:	Building Department		
Estimated Cost:	Low (< \$10,000)		
Potential Funding Sources:	Operating Budget		
Implementation Timeline:	Short-term (< 5 years)		
Goals Met:	1, 2, 3, 7		
Benefits:	This action strengthens the Village’s ability to enforce floodplain management practices.		
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	N/A		
Impact on Critical Facilities/Lifelines:	This action will familiarize the Village staff with updated floodplain management practices which may benefit critical facilities and infrastructure that could be impacted by flooding.		
Impact on Capabilities	N/A		

Impact on Future Development:	N/A		
Climate Change Considerations:	Climate change is leading to an increase in frequency and intensity of precipitation events, which leads to an increase in flooding.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem persists
	Explore having volunteer staff enforce NFIP regulations/floodplain management ordinances		Not preferred

Action 2024-GrandViewV-05. Update Floodplain Management Ordinance

Action Name:	2024-GrandViewV-05. Update Floodplain Management Ordinance	
Description of the Problem:	The Village’s floodplain ordinance was last updated in 2014 and may be less effective than current regulations require. There are some facilities that were built before code updates and may be more vulnerable to damage from hazard event such as flood and severe storm events.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	Review potential future new FIRMs or RiskMAP projects and determine the need to update floodplain management ordinances.	
Lead Agency:	Village Engineer	
Supporting Agencies:	Building Department	
Estimated Cost:	Low (< \$10,000)	
Potential Funding Sources:	Local, State	
Implementation Timeline:	Short-term (< 5 years)	
Goals Met:	1, 2, 5, 7	
Benefits:	This action strengthens the Village’s codes and ordinances.	
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	N/A	
Impact on Critical Facilities/Lifelines:	Ordinance updates may better protect critical facilities and lifelines.	

Impact on Capabilities	A stronger ordinance will allow the Village to enforce more protective standards.		
Impact on Future Development:	Future development will have to follow the ordinance’s provisions.		
Climate Change Considerations:	A stronger ordinance may better prepare the Village for more intense and frequent flooding.		
Priority: Check one	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action	Evaluation	
	No action	Current problem persists	
	Update floodplain management ordinances with each new FIRM update	Time-consuming and not cost-effective	

Action 2024-GrandViewV-06. Community Rating System (CRS)

Action Name:	2024-GrandViewV-06. Community Rating Systems		
Description of the Problem:	The Village does not participate in CRS and could benefit from the associated incentives for flooding and severe storm events. The Village needs to identify whether or not joining the program will be beneficial to the community and its residents.		
Hazard(s) of Concern: Check all that apply	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The Village will support participation in the NFIP Community Rating System (CRS) program by attending CRS workshop(s) if offered within the county. The Village will join the CRS program if adequate resources to support long term participation can be dedicated. See following related Community Assistance Visit (CAV) initiative.		
Lead Agency:	Building Department		
Supporting Agencies:	Floodplain Administrator		
Estimated Cost:	Medium (\$10,000 to \$100,000)		
Potential Funding Sources:	Operating Budget		
Implementation Timeline:	Short-term (< 5 years)		
Goals Met:	1, 2 3, 7		
Benefits:	This action benefits the Village by being able to use CRS incentives and benefits to complete mitigation projects.		
Mitigation Action Type: Check all that apply	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: Check all that apply	<input checked="" type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	N/A		

Impact on Critical Facilities/Lifelines:	CRS activities may better protect critical facilities and lifelines during flood events.		
Impact on Capabilities	Joining CRS may strengthen the Village’s technical knowledge and capability to enforce floodplain management best practices.		
Impact on Future Development:	Future development would have to follow any ordinance revisions that the Village enacts to gain CRS points.		
Climate Change Considerations:	The Village may adopt a stronger ordinance or enact mitigation projects for CRS points that may better prepare the Village for more intense and frequent flooding.		
Priority: Check one	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem persists
	Create local initiative to exceed NFIP requirements		No flood insurance premium discounts for property owners

SECTION 9. JURISDICTIONAL ANNEXES

9.6 TOWN OF HAVERSTRAW

This jurisdictional annex to the Rockland County Hazard Mitigation Plan (HMP) provides information to assist public and private sectors in the Town of Haverstraw with reducing losses from future hazard events. This annex is not guidance of what to do when a disaster occurs; its focus is on actions that can be implemented prior to a disaster to reduce or eliminate damage to property and people. The annex presents a general overview of the Town of Haverstraw, describes who participated in the planning process, assesses the Town’s risk, vulnerability, and capabilities, and outlines a strategy for achieving a more resilient community.

9.6.1 Hazard Mitigation Planning Team

The Town of Haverstraw identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Town departments. The Building Inspector represented the community on the Rockland County HMP Planning Partnership and Steering Committee and supported the local planning process requirements by securing input from persons with specific knowledge to enhance the plan. All departments were asked to contribute to the annex development through reviewing and contributing to the capability assessment, reporting on the status of previously identified actions, and participating in action identification and prioritization.

Table 9.6-1 summarizes Town officials who participated in the development of the annex and in what capacity. Additional documentation of the Town’s planning activities through Planning Partnership meetings is included in Volume I.

Table 9.6-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: George Behn, Building Inspector Address: 1 Rosman Road, Garnerville, New York 10923 Phone Number: (845) 429-2200 Email: gbehn@townofhaverstraw.org	Name/Title: Michael Gamboli, Director of Finance Address: 1 Rosman Road, Garnerville, New York 10923 Phone Number: (845) 429-2200 Email: mgamboli@townofhaverstraw.org
National Flood Insurance Program Floodplain Administrator	
Name/Title: George Behn, Building Inspector Address: 1 Rosman Road, Garnerville, New York 10923 Phone Number: (845) 429-2200 Email: gbehn@townofhaverstraw.org	
Additional Contributors	
Name/Title: Linda Donnelley, Principal Clerk Method of Participation: Participation and completion of worksheets from the Planning Partnership Risk Assessment and Mitigation Action workshops	

9.6.2 Municipal Profile

The Town of Haverstraw is located north of the Rockland County towns of Clarkstown and Ramapo; east of Orange County; south of the Town of Stony Point (Rockland County); and west of the Hudson River. The town has a total area of 27.4 square miles, 5.3 square miles of which are covered by water. There are three incorporated villages

within the town, one of which is also known as Haverstraw. The Village of Haverstraw is the original seat of government for the town, hosting the area's historic central downtown business district and the densest population in northern Rockland County. The villages of Pomona and West Haverstraw are also located within the town. Significant waterways impacting the town include Minisceongo Creek and its tributaries, the Hudson River along the eastern town boundary, and the Mahwah River near the Village of Pomona.

Research has shown that some populations are at greater risk from hazard events because of decreased resources or physical abilities. These populations can be more susceptible to hazard events based on a number of factors including their physical and financial ability to react or respond during a hazard, and the location and construction quality of their housing. Data from the 2017-2021 American Community Survey indicates that 7.8 percent of the population is 5 years of age or younger, 18 percent is 65 years of age or older, 7.1 percent is non-English speaking, 10.1 percent is below the poverty threshold, and 8.8 percent is considered disabled.

9.6.3 Jurisdictional Capability Assessment and Integration

The Town of Haverstraw performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Volume I describes the components included in the capability assessment and their significance for hazard mitigation planning. The jurisdictional assessment for this annex includes analyses of the following:

- Planning and regulatory capabilities
- Development and permitting capabilities
- Administrative and technical capabilities
- Fiscal capabilities
- Education and outreach capabilities
- Classification under various community mitigation programs
- Adaptive capacity to withstand hazard events

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into day-to-day local government operations. As part of the hazard mitigation analysis, planning and /policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress toward plan integration. Development of an updated mitigation strategy provided an opportunity for the Town of Haverstraw to identify opportunities for integration of mitigation concepts that can be incorporated into municipal procedures.

Planning, Legal, and Regulatory Capability and Integration

Table 9.6-2 summarizes the regulatory tools that are available to Town of Haverstraw.

Table 9.6-2. Planning, Legal, and Regulatory Capability and Integration

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Codes, Ordinances, & Regulations				
Building Code	Yes	Chapter 84: Fire Prevention and Building Construction, 2007 (New York State Uniform Fire Prevention and Building Code (the Uniform Code) and the State Energy Conservation Construction Code (the Energy Code))	State, Local	Building Department
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Building Code has permitting requirements and special oversight for development in the floodplain or in areas facing flood risks.				
Zoning/Land Use Code	Yes	Chapter 167: Zoning, 1990	Local	Zoning, Building Inspector, Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The purpose of the Zoning Code is to secure safety from fire flood, panic, and other damages, and promote health and general welfare, in addition to other objectives. There are provisions guiding development in floodplains and wetlands to mitigate potential damage from hazard events.				
Subdivision Code	Yes	Chapter A176: Subdivision of Land, 1990	Local	Zoning, Planning Board, Building Department
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Land to be subdivided shall be of such character that it can be used safely for building purposes without creating danger to health or peril from fire, flood, landslide, or other menace. Proper provision shall be made for access, drainage, water, sewerage and other needed improvements.				
Site Plan Code	Yes	Chapter A173: Site Development Plans, 2004	Local	Planning Board, Building Department
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Town Code requires permits for any construction other than detached, single-family residences or structures accessory thereto.				
Stormwater Management Code	Yes	Article XVI: Chapter 137: Sewers, Part 3: Stormwater Management, 2006	Local	Engineering Department
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The purpose of this article is to provide for the health, safety, and general welfare of the citizens of the Town of Haverstraw through the regulation of non-stormwater discharges to the municipal separate storm sewer system (MS4) to the maximum extent practicable as required by federal and New York State law.				
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Real Estate Disclosure	Yes	New York State (NYS) mandate, Property Condition Disclosure Act, NY Code – Article 14 §460-467	State and local	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The NYS mandate requires sellers to disclose to potential buyers whether their property is located in a designated floodplain				
Growth Management	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Environmental Protection Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Flood Damage Prevention Ordinance	Yes	Chapter 87: Flood Damage Prevention, 2014	Federal, State, Local	Building Inspector
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Town Board of the Town of Haverstraw finds that the potential and/or actual damages from flooding and erosion may be a problem to the residents of the Town of Haverstraw and that such damages may include destruction or loss of private and public housing, damage to public facilities, both publicly and privately owned, and injury to and loss of human life. To minimize the threat of such damages, the Town requires special permits for development of structures and uses that are vulnerable to flood impacts.				
Wellhead Protection	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Emergency Management Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Climate Change Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other: Freeboard	Yes	State Code	State, Local	Village Engineer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
Other: Cumulative Substantial Damage	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Planning Documents				
General/Comprehensive Plan	Yes	6-24-2002 by L.L. No. 7-2002	Local	Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Town's master plan includes areas of natural hazard risk including flood-prone areas and steep slopes, and refers to the county-wide Hazard Mitigation Plan.				
Capital Improvement Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Disaster Debris Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Floodplain Management or Watershed Plan	Yes	Chapter 87, 2014 Chapter A176, Article VI, 1990	Federal, State, Local	Building Department, Engineering
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Town Stormwater Coordinator is the appointed local floodplain administrator to administer and implement the ordinance by granting or denying floodplain development permits in accordance with its provisions.				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Stormwater Management Plan	Yes	Stormwater Management Plan, 2012	Local	Engineering, Highway
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The Town of Haverstraw has enacted Stormwater Management Regulations (SMRs) to protect and safeguard the general health, safety and welfare of the public residing with in the Town of Haverstraw and the natural resources of Town. As part of the SMRs, Patrick Brady, P.E., has been designated the Stormwater Management Officer (SMO) for the Town of Haverstraw. The SMO oversees the SMRs and manages the Municipal Separate Storm Sewer Systems (MS4s).				
Open Space Plan	Yes	Chapter A176, Article VII	Local	Planning, Building
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The Town has an Open Space Plan which helps to manage natural hazard risk through erosion control, prescribing maintenance for grass and trees, and providing for natural slope stabilization.				
Urban Water Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Habitat Conservation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Economic Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Community Wildfire Protection Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Community Forest Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Transportation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Agriculture Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Climate Action/ Resiliency/Sustainability Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Tourism Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Business/ Downtown Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Other (for example NYRCR, etc.)	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Response/Recovery Planning				
Comprehensive Emergency Management Plan	Yes	Town of Haverstraw EOP, 2014	Local	OEM
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Emergency Operation Plan for the Town of Haverstraw was updated in 2014. Its implementation is overseen by the Town’s Emergency Coordinator.				
Continuity of Operations Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Substantial Damage Response Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Threat & Hazard Identification & Risk Assessment	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Post-Disaster Recovery Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Public Health Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

Development and Permitting Capability

Table 9.6-3 summarizes the capabilities of Town of Haverstraw to oversee and track development.

Table 9.6-3. Development and Permitting Capability

Indicate if your jurisdiction implements the following	Yes/No	Comment:
Do you issue development permits? <ul style="list-style-type: none"> If you issue development permits, what department is responsible? If you do not issue development permits, what is your process for tracking new development? 	Yes	Building Department
Are permits tracked by hazard area? (For example, floodplain development permits.)	Yes	-

Indicate if your jurisdiction implements the following	Yes/No	Comment:
Do you have a buildable land inventory? <ul style="list-style-type: none"> If you have a buildable land inventory, please describe 	Unknown	-
Describe the level of build-out in your jurisdiction.	N/A	-

Administrative and Technical Capability

Table 9.6-4 summarizes potential staff and personnel resources available to Town of Haverstraw and their current responsibilities that contribute to hazard mitigation.

Table 9.6-4. Administrative and Technical Capabilities

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
<i>Administrative Capability</i>		
Planning Board	Yes	The Planning Board meets every second Wednesday of the month at 7:30PM in the large meeting room of Town Hall. It is the legislative intent of the Planning Board to consider land subdivisions and site development plans as part of a plan for the orderly, efficient, and economical development of the Town of Haverstraw. The Planning Board is also charged with reviewing the Master Plan.
Zoning Board of Adjustment	Yes	The Zoning Board of Appeals meets every second Wednesday of the month at 7:00PM in the large meeting room of the Town Hall. The Zoning Board of Appeals has all the authority and duties prescribed by the State of New York Town Law and Town of Haverstraw code standards.
Planning Department	No	-
Mitigation Planning Committee	Yes	Emergency Management Coordinator
Environmental Board/Commission	No	-
Open Space Board/Committee	Yes	Planning, Zoning, Building Department
Economic Development Commission/Committee	No	-
Public Works/Highway Department	Yes	The Town of Haverstraw Highway Dept. employees perform various work-related duties in and around the town’s roads. The Department perform snow removal operations, pick-up yard waste, maintain all Town roadways, and perform grounds work of all Town facilities.
Construction/Building/Code Enforcement Department	Yes	The Building Department issues permits and conducts inspections.
Emergency Management/Public Safety Department	Yes	The mission of the Haverstraw Town Police Department is to protect the right of all persons within its jurisdiction to be free from criminal attack, secure in their possessions and to live in peace. The Department consist of the Patrol, Detective, and Youth divisions.
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	Yes	The Town of Haverstraw Highway Dept. employees perform various work-related duties in and around the town’s roads. The Department perform snow removal operations, pick-up yard waste, maintain all Town roadways, and perform grounds work of all Town facilities.
Mutual aid agreements	Yes	Building, Engineering, Police, Fire, and Highway Departments

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	No	-
Other	No	-
<i>Technical/Staffing Capability</i>		
Planners or engineers with knowledge of land development and land management practices	Yes	Planning, Zoning, Engineering, Building
Engineers or professionals trained in building or infrastructure construction practices	Yes	Engineering
Planners or engineers with an understanding of natural hazards	Yes	Planning and Engineering
Staff with expertise or training in benefit/cost analysis	Yes	Consultant Engineers
Professionals trained in conducting damage assessments	Yes	Brooker Engineers and GHD Engineering Firm
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	Yes	Building and Highway Departments
Personnel skilled or trained in GIS and/or Hazus applications	Yes	Building and Highway Departments
Environmental scientist familiar with natural hazards	No	-
Surveyor(s)	Yes	Engineering
Emergency Manager	Yes	Emergency Coordinator
Grant writer(s)	Yes	Staff and consultant engineers
Resilience Officer	No	-
Other (this could include stormwater engineer, environmental specialist, etc.)	No	-

Fiscal Capability

Table 9.6-5 summarizes financial resources available to Town of Haverstraw.

Table 9.6-5. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use? (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	Yes, in certain areas of town
Capital improvements project funding	Yes
Authority to levy taxes for specific purposes	Yes
User fees for water, sewer, gas or electric service	Yes
Impact fees for homebuyers or developers of new development/homes	Yes
Stormwater utility fee	Yes
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	No
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	No

Financial Resources	Accessible or Eligible to Use? (Yes/No)
Other federal or state Funding Programs	Yes
Open Space Acquisition funding programs	No
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	No

Education and Outreach Capability

Table 9.6-6 summarizes the education and outreach resources available to Town of Haverstraw.

Table 9.6-6. Education and Outreach Capabilities

Outreach Resources	Available? (Yes/No)	Comment:
Public information officer or communications office	No	-
Personnel skilled or trained in website development	Yes	Contracted
Hazard mitigation information available on your website	No	-
Social media for hazard mitigation education and outreach	Yes	The Police Department has a Facebook page which can be utilized for hazard mitigation education and outreach.
Citizen boards or commissions that address issues related to hazard mitigation	No	-
Warning systems for hazard events	Yes	The County utilizes NY-Alert and CodeRed (the backup to NY-Alert) for emergency notifications (all Towns and Villages have access to it).
Natural disaster/safety programs in place for schools	No	-
Organizations that conduct outreach to socially vulnerable populations and underserved populations		
Public outreach mechanisms / programs to inform citizens on natural hazards, risk, and ways to protect themselves during such events	Yes	Newsletter
If yes, please describe.	-	The town newsletter, the Town of Haverstraw Talk of the Town, is sent out quarterly.

Community Classifications

Table 9.6-7 summarizes classifications for community programs available to Town of Haverstraw.

Table 9.6-7. Community Classifications

Program	Participating? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	-	-
New York State Department of Environmental Conservation (NYSDEC) Climate Smart Community	No	-	-
National Weather Service Storm Ready Certification	No	-	-
Firewise Communities classification	No	-	-
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable
 — = Unavailable

Adaptive Capacity

Adaptive capacity is defined as “the ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or respond to consequences” (IPCC, 2022). Each jurisdiction has a unique combination of capabilities to adjust to, protect from, and withstand a future hazard event, future conditions, and changing risk. Table 9.6-8 summarizes the adaptive capacity for each identified hazard of concern and the Town’s capability to address related actions using the following classifications:

- Strong: Capacity exists and is in use.
- Moderate: Capacity might exist; but is not used or could use some improvement.
- Weak: Capacity does not exist or could use substantial improvement.

Table 9.6-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Disease Outbreak	Moderate
Drought	Moderate
Earthquake	Moderate
Extreme Temperature	Moderate
Flood	Moderate
Landslide	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

9.6.4 National Flood Insurance Program Compliance

This section provides specific information on the management and regulation of the regulatory floodplain, including current and future compliance with the National Flood Insurance Program (NFIP). The floodplain administrator listed in Table 9.6-1 is responsible for maintaining this information.

NFIP Summary

Table 9.6-9 summarizes the NFIP statistics for Town of Haverstraw.

Table 9.6-9. Town of Haverstraw NFIP Summary of Policy and Claim Statistics

# Policies	17
# Claims (Losses)	55
Total Loss Payments	\$390,221
# Repetitive Loss Properties (NFIP definition)	0
# Repetitive Loss Properties (FMA definition)	4
# Severe Repetitive Loss Properties	0
# Policies Within the 1 percent Annual Chance Flood Boundary	0

NFIP Definition of Repetitive Loss: The NFIP defines a repetitive loss property as any insurable building for which two or more claims of more than \$1,000 were paid by the NFIP within any rolling 10-year period since 1978.

FMA Definition of Repetitive Loss: FEMA’s Flood Mitigation Assistance (FMA) program defines a repetitive loss property as any insurable building that has incurred flood-related damage on two occasions, in which the cost of the repair, on average, equaled or exceeded 25 percent of the market value of the structure at the time of each such flood event.

Definition of Severe Repetitive Loss: A residential property covered under an NFIP flood insurance policy and: (a) That has at least four NFIP claim payments over \$5,000 each, and the cumulative amount of such claims payments exceeds \$20,000; or (b) For which at least two separate claims payments have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building. At least two of the claims must have occurred within any 10-year period, more than 10 days apart.

Source: FEMA, December 2023

Note: RL count may include properties also identified as SRL.

Flood Vulnerability Summary

Table 9.6-10 provides a summary of the NFIP program in Town of Haverstraw.

Table 9.6-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	According to the 2014 FEMA Flood Insurance Study, the Town of Haverstraw is presently subject to flooding in areas adjacent to Minisceongo Creek and its tributaries in the vicinity of Letchworth Village and Thiells Mount Ivy Road. The Hudson River often causes flooding in Bowling Park. The Mahwah River causes occasional flooding in the vicinity of Deer Mountain Day Camp.
Do you maintain a list of properties that have been damaged by flooding?	Unknown
Do you maintain a list of property owners interested in flood mitigation?	Unknown
How many homeowners and/or business owners are interested in mitigation (elevation or acquisition)?	Unknown
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what projects are underway.	Unknown
How do you make Substantial Damage determinations?	The Town does not have a Substantial Damage Plan.*
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	None
How many properties have been mitigated (elevation or acquisition) in your jurisdiction? • If there are mitigation properties, how were the projects funded?	Unknown

NFIP Topic	Comments
Do your flood hazard maps adequately address the flood risk within your jurisdiction? <ul style="list-style-type: none"> If not, state why. 	Unknown
NFIP Compliance	
What local department is responsible for floodplain management?	Building Department
Are any certified floodplain managers on staff in your jurisdiction?	Unknown
Do you have access to resources to determine possible future flooding conditions from climate change?	Unknown
Does your floodplain management staff need any assistance or training to support its floodplain management program? <ul style="list-style-type: none"> If so, what type of assistance/training is needed? 	Unknown
Provide an explanation of NFIP administration services you provide (e.g., permit review, GIS, education/outreach, inspections, engineering capability)	Permit review, building inspections
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	Unknown
What are the barriers to running an effective NFIP program in the community, if any?	Unknown
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? <ul style="list-style-type: none"> If so, state the violations. 	Unknown
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	May 12, 2021
What is the local law number or municipal code of your flood damage prevention ordinance?	Chapter 87: Flood Damage Prevention Ordinance
What is the date that your flood damage prevention ordinance was last amended?	2014
Does your floodplain management program meet or exceed minimum requirements? <ul style="list-style-type: none"> If exceeds, in what ways? 	Meets
Are there other local ordinances, plans or programs (e.g., site plan review) that support floodplain management and meeting the NFIP requirements? For instance, does the planning board or zoning board consider efforts to reduce flood risk when reviewing variances such as height restrictions?	Yes
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	No

*Note: *The Town reported it does not have a process to make substantial damage determinations; however, during this planning process, it was confirmed that substantial damage determination provisions are established in both the adopted NFIP ordinance and adopted building code. This response has not been changed to accurately reflect the tools leveraged by the Town to mitigate risks.*

9.6.5 Growth/Development Trends

Understanding how past, current, and projected development patterns have or are likely to increase or decrease risk in hazard areas is a key component to appreciating a jurisdiction’s overall risk to its hazards of concern. Recent and expected future development trends, including major residential/commercial development and major infrastructure development, are summarized in Table 9.6-11 through Table 9.6-13.

Table 9.6-11. Number of Building Permits for New Construction Issued Since the Previous HMP

	New Construction Permits Issued			Total
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	
2019				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2020				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2021				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2022				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2023				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0

SFHA = Special Flood Hazard Area (1 percent flood event)

Table 9.6-12. Recent Major Development and Infrastructure from 2018 to Present

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
No major development or infrastructure reported.					

* Only location-specific hazard zones or vulnerabilities identified.

Table 9.6-13. Known or Anticipated Major Development and Infrastructure in the Next Five Years

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
No anticipated major development or infrastructure reported.					

* Only location-specific hazard zones or vulnerabilities identified.

9.6.6 Jurisdictional Risk Assessment

The hazard profiles in Volume I provide detailed information regarding each planning partner’s vulnerability to the identified hazards, including summaries of the Town of Haverstraw’s risk assessment results and data used to determine the hazard ranking. Key local risk assessment information is presented below.

Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Town are shown in Figure 9.6-1 through Figure 9.6-2. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps are provided only for hazards that can be identified clearly using mapping techniques and technologies and for which Haverstraw has significant exposure. The maps show the location of potential new development, where available.

Figure 9.6-1. Town of Haverstraw Flood and Dam Inundation Hazard Area Extent and Location

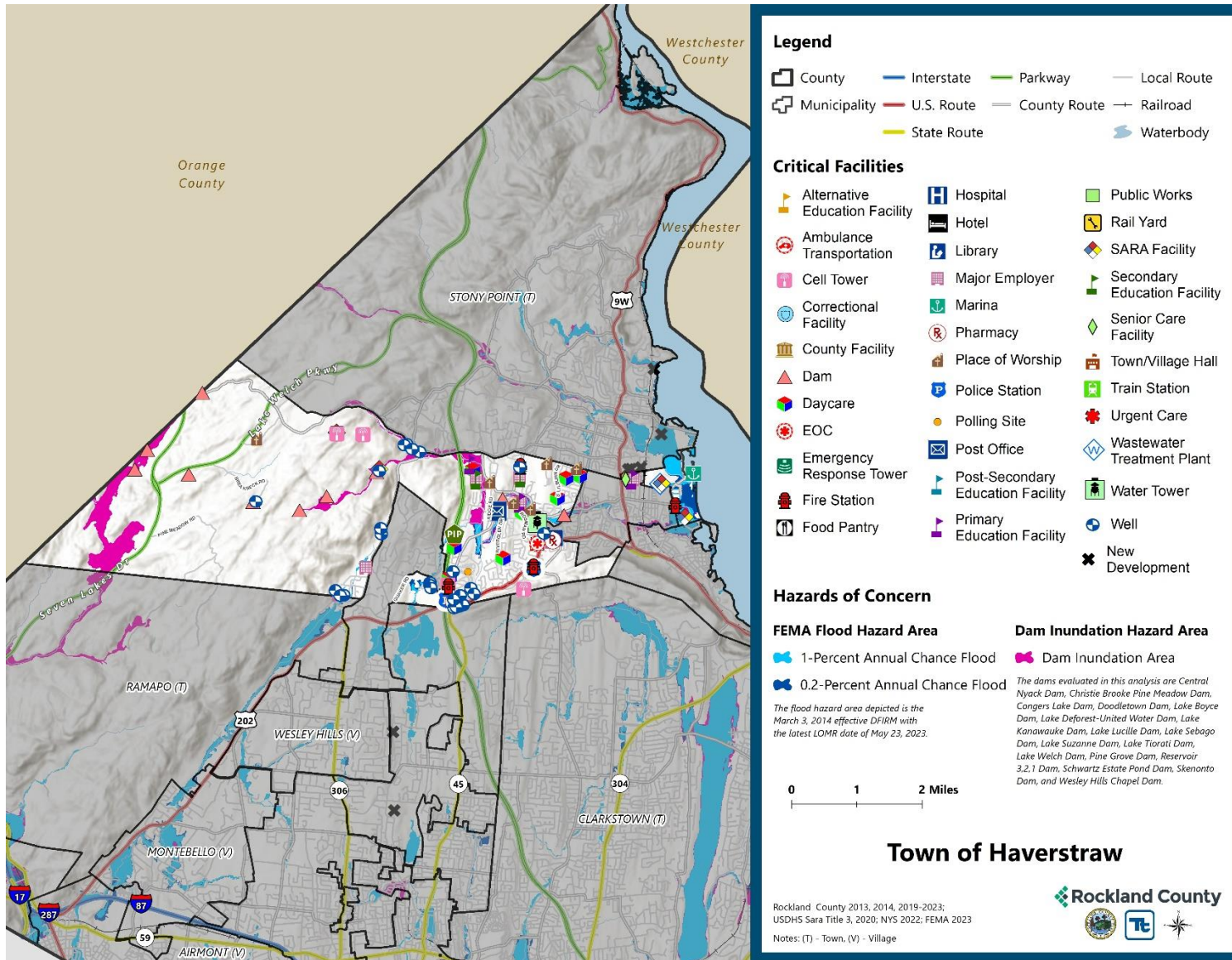
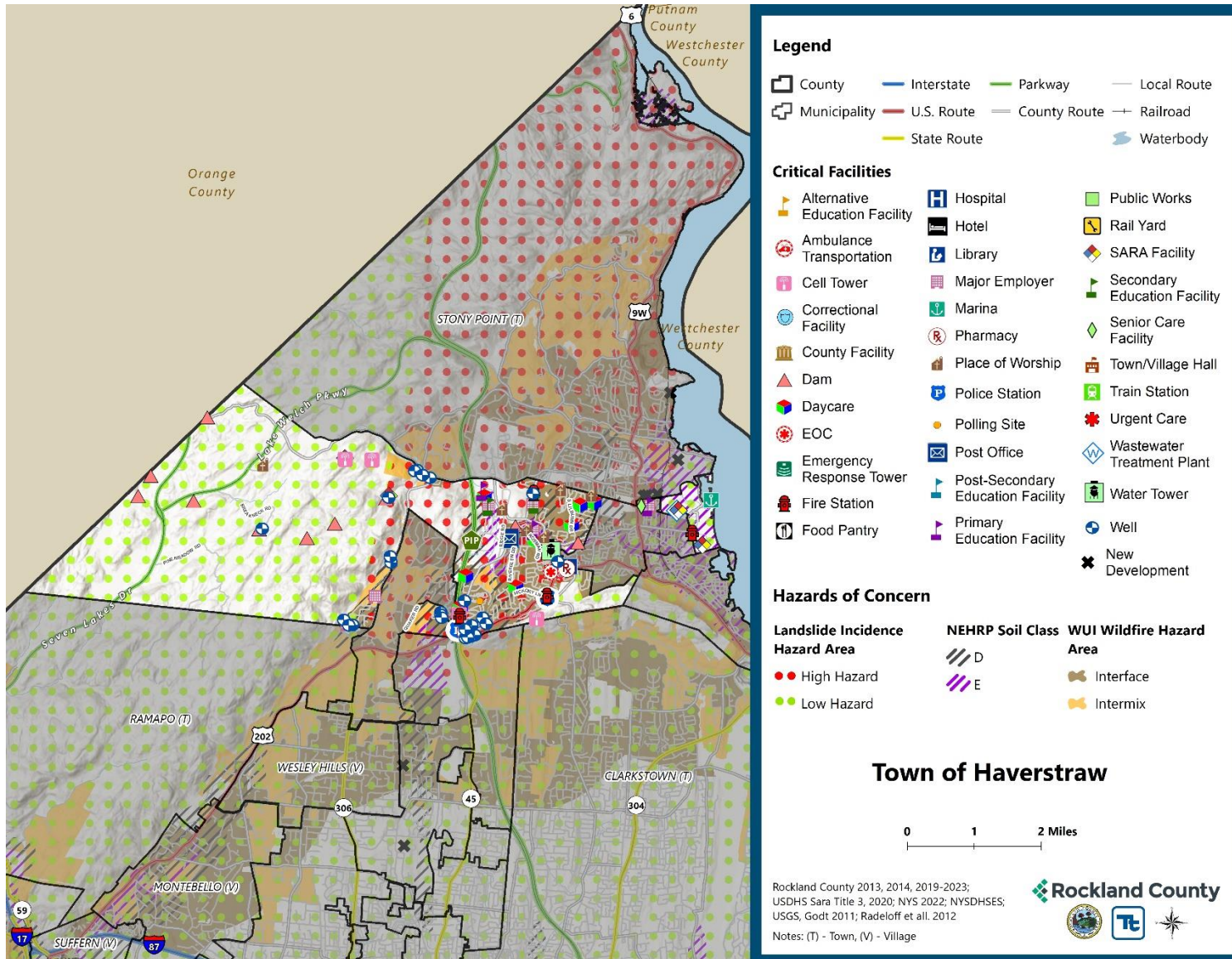


Figure 9.6-2. Town of Haverstraw Landslide, Earthquake, and Wildfire Hazard Area Extent and Location



Hazard Event History

The history of natural and non-natural hazard events in the Town of Haverstraw is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 9.6-14 provides details on loss and damage in the Town during hazard events since the last hazard mitigation plan update.

Table 9.6-14. Hazard Event History in the Town of Haverstraw

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Summary of Damage and Losses in the Town
January 20, 2020 - May 11, 2023	New York Covid-19 (3434-EM-NY, 4480-DR-NY)	Yes	The Covid-19 pandemic resulted in nationwide shutdowns, social distancing and masking requirements, and immunization efforts. Since the start of the pandemic, roughly 950 deaths have been reported in Rockland County. The federal Public Health Emergency expired in May 2023 but illness continues to occur as the virus shifts to becoming endemic.	-
April 13, 2020	High Winds		High winds across the county led to downed trees, power outages, closed roads,	\$200,000 in property damage
August 4, 2020	New York Tropical Storm Isaias (4567-DR-NY)	Yes	The center of Isaias passed about 65 miles west of New York City at 3 pm on August 4, 2020. Tropical storm force winds extended well east of the center of circulation. In addition, 1 to 3 inches of rainfall, highest west, were recorded across the county. These types of winds and rainfall across the area resulted in numerous trees and tree limbs being downed, power outages, damages to homes and automobiles, and disruption to transit.	-
August 21-24, 2021	New York Hurricane Henri (3565-EM-NY)	Yes	Rainfall from Tropical Storm Henri resulted in widespread flash flooding across southeastern New York, particularly portions of the Lower Hudson Valley. Rainfall totals generally ranged from 2-5 inches, with this rain coming in addition to the 2-5 inches that fell during the predecessor rainfall event the night before.	-

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Summary of Damage and Losses in the Town
September 1-3, 2021	New York Remnants of Hurricane Ida (3572-EM-NY, 4615-DR-NY)	Yes	Extremely heavy rainfall associated with the remnants of Hurricane Ida overspread southeast New York during the evening of September 1 and continued through the early morning hours of September 2. Rainfall totals ranged from 5-8 inches across much of the region, with much of that rain falling in just a few hours. This resulted in widespread catastrophic flash flooding.	-
July 9-10, 2023	Severe Storm, Flooding		Severe storms and flooding resulted in road closures, including portions of the Palisades Interstate Parkway, throughout Rockland County.	-

EM = Emergency Declaration (FEMA)
 FEMA = Federal Emergency Management Agency
 DR = Major Disaster Declaration (FEMA)
 N/A = Not applicable

Hazard Ranking and Vulnerabilities

The hazard profiles in Volume I have detailed information regarding each planning partner’s vulnerability to the identified hazards. The following summarizes presents key risk assessment results for the Town of Haverstraw.

Hazard Ranking

The participating jurisdictions have differing degrees of vulnerability to the hazards of concern, so each jurisdiction ranked its own degree of risk to each hazard. The community-specific hazard ranking is based on problems and impacts identified by the risk assessment presented in Volume I. The ranking process involves an assessment of the likelihood of occurrence for each hazard; the potential impacts of the hazard on people, property, and the economy; community capabilities to address the hazard; and changing future climate conditions. Haverstraw reviewed the County hazard ranking and individual results to assess the relative risk of the hazards of concern to the community. During the review of the hazard ranking, the Town indicated the following:

- There are no dams or levees in the Town.
- There is improved education related to potential disease outbreaks.
- The Town Hall is now a cooling center. The Town indicated it did not agree with the 2019 Medium ranking but did not provide an alternate preferred ranking. Due to the addition of a cooling center and the Town’s response, the hazard ranking has been revised to Low.
- There are better stabilization practices to mitigate potential landslides. The Town indicated it did not agree with the 2019 High ranking but did not provide an alternate preferred ranking. Due to the addition of a improved practices and the Town’s response, the hazard ranking has been revised to Medium.

Table 9.6-15 shows Haverstraw’s final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 9.6-15. Hazard Ranking

Hazard	Rank
Dam Failure	Low
Disease Outbreak	Medium
Drought	Medium
Earthquake	Medium
Extreme Temperature	Low
Flood	Medium
Landslide	Medium
Severe Weather	High
Severe Winter Weather	High
Wildfire	Medium

Note: The scale is based on the hazard rankings established in Volume I, modified as appropriate based on review by the jurisdiction

Critical Facilities

Table 9.6-16 identifies critical facilities in the community located in the 1-percent and 0.2-percent annual chance floodplains.

Table 9.6-16. Critical Facilities Flood Vulnerability

Name	Type	Exposure		Addressed by Proposed Action	Already Protected to 0.2 percent Flood Level (describe protections)
		1 percent Event	0.2 percent Event		
Bowline Point Generating Station	SARA Facility	Yes	Yes	2024-HaverstrawT-05	No
Garnerville Dam	Dam	Yes	Yes	2024-HaverstrawT-05	No
Langshur Dam	Dam	Yes	Yes	2024-HaverstrawT-05	No
Camp Ramaquois Well #2	Well	Yes	Yes	2024-HaverstrawT-05	No

Source: Rockland County 2023, FEMA

In addition to critical facilities that are exposed to flooding, the following high hazard dams are located in or could impact Town of Haverstraw:

- Garnerville Dam

Identified Issues

After review of the Town of Haverstraw’s hazard event history, hazard rankings, hazard location, and current capabilities, the Town of Haverstraw identified the following vulnerabilities within their community:

- Town residents are not aware of hazards that they are exposed to and what can be done to further protect themselves and their properties from damages. The hazards that the Town is at risk for include dam/levee failure, disease outbreak, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, and wildfire. The Town experiences flooding along the Minisceongo Creek and its tributaries due to a combination poor drainage infrastructure and streamflow from severe storm and severe winter storm. In 2019, the Town completed a Flood Mitigation and Resilience Report that identified two High Risk Areas due to the Minisceongo Creek. Rockland County has jurisdiction over the

Minisceongo, requiring coordination with the Town. Access to the Highway Garage becomes difficult during flooding events due to increased severe storms and the. The Town has completed approximately 25 percent of this project that allows emergency access road behind the Highway Garage.

- The Town Golf Course frequently becomes flooded and inundated when it rains due to poor drainage.
- The following critical facilities are located floodplain and identified as vulnerable to the flood hazard from severe storm events: Camp Ramaquois, Well #2, O&R Bowline Substation, and Bowline Point Gas Power Plant. The Town does not have jurisdiction over these facilities to mitigate.
- The David B Roche Fire Company building is located in the floodplain and identified as vulnerable to the flood and severe storm hazards. This building is owned by the Fire District; the Town does not have jurisdiction to mitigate the structure.
- The shoreline along Bowline Park is eroding which is giving way to flood events due to severe storms.
- The municipality does not have a Substantial Damage Management Ordinance, nor do they have a standard process in place when conducting substantial damage determinations. The Town has substantial damage determination provisions in both the adopted NFIP ordinance and adopted building code, but staff are unaware of these provisions and do not leverage them.

**This issue was identified as a specific area of concern based on resident response to the Rockland County Hazard Mitigation Citizen survey.*

9.6.7 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and prioritizes actions to address over the next five years.

Past Mitigation Initiative Status

Table 9.6-17 indicates progress on the Town's mitigation strategy identified in the 2019 HMP. Actions that are still recommended but not completed or that are in progress are carried forward and combined with new actions as part of the mitigation strategy for this plan update. Previous actions that are now ongoing programs and capabilities are indicated as such and are presented in the capability assessment earlier in this annex.

Additional Mitigation Efforts

In addition to the mitigation initiatives completed in Table 9.6-17, Town of Haverstraw identified the following mitigation efforts completed since the last HMP:

- Completion of new Grassy Point Bridge over Minisceongo Creek in November 2023

Table 9.6-17. Status of Previous Mitigation Actions

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
TH-1	Outreach Campaign	All Hazards	Town of Haverstraw, Rockland County	Residents may be unaware of how to prepare themselves for natural hazards. Enhance outreach to promote further public education and awareness in the community with respect to natural hazard risk management.	1. Ongoing Capability 2. N/A	1. Include 2. Revised problem description and solution. 3. N/A
TH-2	Shoreline Mitigation at Bowline Point Park	Flood, Severe Storm	Town of Haverstraw, NYS DEC & Army Corp	The shoreline at Bowline Point Park has become eroded. Construct two jetties on the riverside of Bowline Point Park to mitigate the eroding of the shoreline.	1. In progress 2. Received \$100,000 in Community Block Group Development funding in 2015.	1. Include 2. N/A 3. In process of getting environmental approvals.
TH-3	Minisceongo Creek Maintenance	Flood, Severe Storm	Rockland County Drainage Agency, Town of Haverstraw and West Haverstraw	The Minisceongo Creek frequently floods. Perform flood remediation efforts including routine stream maintenance and dredging.	1. No Progress 2. A Resilient NY report was completed for the Minisceongo Creek in 2019. It identified two High Risk Areas within the Town.	1. Discontinue 2. N/A 3. Consolidate with old actions (TH-4 and TH-7) to a single new strategy (2024-HaverstrawT-02).
TH-4	Minisceongo Creek Bank Stabilization	Flood, Severe Storm	Highway Dept., Rockland County	The Minisceongo Creek Bank has eroded due to continued floods. Stabilize banks to reduce future erosion, narrowing of the streambed, and resulting flooding along Minisceongo.	1. No Progress 2. A Resilient NY report was completed for the Minisceongo Creek in 2019. It identified two High Risk Areas within the Town.	1. Discontinue 2. N/A 3. Consolidate with old actions (TH-3 and TH-7) to a single new strategy (2024-HaverstrawT-02).

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
TH-5	Highway Garage Emergency Access Road	Flood, Severe Storm	Highway Dept., Private Landowner	Access to the Highway Garage becomes difficult during flooding events. Construct emergency access road in back of Highway Garage up to Creekview Drive.	1. In Progress 2. About 25 percent complete.	1. Include 2. N/A 3. N/A
TH-6	Golf Course Drainage Improvements	Flood	Town Golf Dept.	The Town Golf Course frequently becomes flooded in rains due to poor drainage. Drill well(s) and install storage/pump system to correct drainage on golf course fairway number 13 and 16.	1. No Progress 2. N/A	1. Include 2. N/A 3. N/A
TH-7	Maintenance of Tributary	Flood, Severe Storm	Town of Haverstraw MS4 administrator	A tributary of the Minisceongo Creek floods the area due to poor drainage. Improve drainage and stormwater control system near the tributary.	1. No Progress 2. A Resilient NY report was completed for the Minisceongo Creek in 2019. It identified two High Risk Areas within the Town.	1. Discontinue 2. N/A 3. Consolidate with old actions (TH-3 and TH-4) to a single new strategy (2024-HaverstrawT-02).

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
TH-8	Critical Facilities in Floodplain	Flood	Private Property Owners with Town of Haverstraw support	<p>The following critical facilities are located floodplain and identified as vulnerable to the flood hazard: Camp Ramaquois, Well #2, O&R Bowline Substation, and Bowline Point Gas Power Plant. The Town does not have jurisdiction over these facilities to mitigate.</p> <p>The Town will work with the Village and County to notify the facility manager/operator of these critical facilities regarding their flood vulnerability as identified during the Rockland County HMP update and NYS' requirement to protect to the 500-year flood or worst-case scenario. The Town will provide the owners information regarding grant options for funding to implement their mitigation action.</p>	<p>1. No Progress 2. N/A</p>	<p>1. Include 2. N/A 3. N/A</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
TH-9	Fire Company Building in Floodplain	Flood	Fire District, supported by Town	<p>The David B Roche Fire Company building is located in the floodplain and identified as vulnerable to the flood hazard. This building is owned by the Fire District; the Town does not have jurisdiction to mitigate the structure.</p> <p>The Town will work with the Fire District to notify them of the building's vulnerability and NYS' requirement to protect the structure to the 500-year or worst-case scenario. The Town will provide the Fire District options for grant funding to implement their selected mitigation action.</p>	<p>1. No Progress 2. N/A</p>	<p>1. Include 2. N/A 3. N/A</p>

Proposed Hazard Mitigation Initiatives for the HMP Update

Haverstraw participated in the mitigation strategy workshop for this HMP to identify appropriate actions to include in a local hazard mitigation strategy. Its comprehensive consideration of all possible activities to address hazards of concern included review of the following FEMA documents:

- FEMA 551 “Selecting Appropriate Mitigation Measures for Floodprone Structures” (March 2007)
- FEMA “Mitigation Ideas—A Resource for Reducing Risk to Natural Hazards” (January 2013).

The action worksheets included at the end of this annex list the mitigation actions that Haverstraw would like to pursue in the future to reduce the effects of hazards. The actions are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in the Town’s priorities.

Table 9.6-18 indicates the range of proposed mitigation action categories. The four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table to further demonstrate the wide range of activities and mitigation measures selected.

Volume I identifies 14 evaluation criteria for prioritizing the mitigation actions. To assist with rating each mitigation action as high, medium, or low priority, a numeric rank is assigned (-1, 0, or 1) for each of the evaluation criteria. Table 2-19 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Table 9.6-18. Analysis of Mitigation Actions by Hazard and Category

Hazard	Actions That Address the Hazard, by Action Category									
	FEMA				CRS					
	LPR	SIP	NSP	EAP	PR	PP	PI	NR	SP	ES
Dam Failure	1	-	-	1	1	-	1	-	-	1
Disease Outbreak	-	-	-	1	-	-	1	-	-	-
Drought	1	-	-	1	1	-	1	-	-	1
Earthquake	1	-	-	1	1	-	1	-	-	1
Extreme Temperature	1	-	-	1	1	-	1	-	-	1
Flood	1	4	1	2	2	2	3	-	1	2
Landslide	1	-	-	1	1	-	1	-	-	1
Severe Weather	1	4	1	2	2	2	3	-	1	2
Severe Winter Weather	1	1	1	1	2	-	1	1	-	1
Wildfire	1	-	-	1	1	-	1	-	-	1

Local Plans and Regulations (LPR)—These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.

Structure and Infrastructure Project (SIP)—These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct structures to reduce the impact of hazards.

Natural Systems Protection (NSP)—These are actions that minimize damage and losses and preserve or restore the functions of natural systems.

Education and Awareness Programs (EAP)—These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities

Preventative Measures (PR)—Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.

Property Protection (PP)—These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.

Public Information (PI)—Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.

Natural Resource Protection (NR)—Actions that minimize hazard loss and preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.

Structural Flood Control Projects (SP)—Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.

Emergency Services (ES)—Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities.

Table 9.6-19. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Other Community Objectives	Total	High / Medium / Low
2024-HaverstrawT-01	Public Awareness and Outreach	1	0	1	0	1	1	0	1	1	1	0	1	0	1	9	Medium
2024-HaverstrawT-02	Minisceongo Creek Flood Mitigation	1	1	1	0	-1	-1	1	0	1	1	1	1	1	1	11	High
2024-HaverstrawT-03	Highway Garage Emergency Access Route	1	1	1	1	0	1	0	1	1	1	0	1	1	1	11	High
2024-HaverstrawT-04	Town Golf Course Drainage Improvements	0	1	1	0	1	1	0	0	1	1	0	0	0	0	6	Low
2024-HaverstrawT-05	Critical Facilities in the Floodplain	1	1	1	0	0	1	0	0	1	1	1	0	1	0	8	Medium
2024-HaverstrawT-06	Roche Fire Company Building Flood Mitigation	1	1	1	0	0	0	0	0	1	1	0	1	1	0	7	Medium
2024-HaverstrawT-07	Bowline Park Shoreline Stabilization	1	1	1	0	0	0	1	0	1	1	1	0	0	0	7	Medium
2024-HaverstrawT-08	Substantial Damage Determination Trainings and Resources	1	1	1	0	1	1	0	0	1	1	1	1	1	1	11	High

Note: Volume I, Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14).

Action 2024-HaverstrawT-01. Public Awareness and Outreach

Action Name:	2024-HaverstrawT-01. Public Awareness and Outreach		
Description of the Problem:	Town residents are not aware of hazards that they are exposed to and what can be done to further protect themselves and their properties from damages. The hazards that the Town is at risk for include dam/levee failure, disease outbreak, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, and wildfire.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire	
Description of the Solution:	The Town will improve public awareness on hazards, prevention, and mitigation through increased outreach, including but not limited to periodic discussion of hazard mitigation and the mitigation plan at other regular local meetings; use of annual flyers, newsletters, advertisements, or radio/TV announcements, etc.; and incorporating as much free information as possible from the FEMA publications warehouse and other appropriate sources on the Town website.		
Lead Agency:	Town Supervisor		
Supporting Agencies:	Rockland County Office of Emergency Services		
Estimated Cost:	Low (< \$10,000)		
Potential Funding Sources:	Operating Budget		
Implementation Timeline:	Short-term (< 5 years)		
Goals Met:	1, 3		
Benefits:	This action educated Town residents.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	This initiative aims to reach populations that are low-income, do not speak English, and have limited internet access or technical capabilities.		
Impact on Critical Facilities/Lifelines:	N/A		
Impact on Capabilities	This action strengthens the Town education and outreach capabilities.		
Impact on Future Development:	N/A		
Climate Change Considerations:	Climate change is leading to an increase in frequency and intensity of precipitation events.		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low

Alternatives	Action	Evaluation
	No action	Problem persists
	Update website without linking to other resources	Would not reach those with limited internet or technology; not preferred

Action 2024-HaverstrawT-02. Minisceongo Creek Flood Mitigation

Action Name:	2024-HaverstrawT-02. Minisceongo Creek Flood Mitigation	
Description of the Problem:	The Town experiences flooding along the Minisceongo Creek and its tributaries due to a combination poor drainage infrastructure and streamflow from severe storm and severe winter storm. In 2019, the Town completed a Flood Mitigation and Resilience Report that identified two High Risk Areas due to the Minisceongo Creek. Rockland County has jurisdiction over the Minisceongo, requiring coordination with the Town.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Town will implement stream maintenance and consider dredging to reduce potential flooding. Stabilize banks to reduce future erosion, narrowing of the streambed, and resulting flooding along Minesceongo. Improve and maintain the County’s and Town’s stormwater and drainage infrastructure along and near the waterway.	
Lead Agency:	Rockland County Drainage Agency	
Supporting Agencies:	Town Highway Department, MS4 Administrator	
Estimated Cost:	High (> \$100,000)	
Potential Funding Sources:	FEMA FMA, BRIC and HMGP, CDBG, NYS DHSES, NYS DOT, Town Operating Budget	
Implementation Timeline:	Ongoing	
Goals Met:	1	
Benefits:	This action strengthens the Town’s ability to respond to flood events.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input checked="" type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input checked="" type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	N/A	
Impact on Critical Facilities/Lifelines:	N/A	
Impact on Capabilities	This action strengthens the Town’s ability to monitor flooding.	
Impact on Future Development:	Future development near the waterway will face lower exposure and vulnerability to flooding, particularly flash flooding.	

Climate Change Considerations:	Regular maintenance and oversight of the Minisceongo may allow the County and Town to better anticipate growing risks and needs due to increased and more intense precipitation.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Problem persists
	Redirect waterway		Not feasible

Action 2024-HaverstrawT-03. Highway Garage Emergency Access Route

Action Name:	2024-HaverstrawT-03. Highway Garage Emergency Access Route	
Description of the Problem:	Access to the Highway Garage becomes difficult during flooding events due to increased severe storms and the Town has completed approximately 25 percent of a project that allows emergency access road behind the Highway Garage.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Town will continue to construct emergency access road behind Highway Garage up to Creekview Drive.	
Lead Agency:	Town	
Supporting Agencies:	Town Board	
Estimated Cost:	High (> \$100,000)	
Potential Funding Sources:	Town Operating Budget, NYS DOT, FEMA	
Implementation Timeline:	Short (<5 years)	
Goals Met:	1	
Benefits:	This action allows emergency access to the Highway Garage.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	N/A	
Impact on Critical Facilities/Lifelines:	Aims to keep roadways passable during flooding events.	
Impact on Capabilities	this action strengthens the Town’s ability to handle flood events.	

Impact on Future Development:	Nearby development may face reduced flood impacts.		
Climate Change Considerations:	Climate change is leading to an increase in frequency and intensity of precipitation events, which leads to an increase in flooding.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Problem persists
	Relocate Highway Garage		Not feasible

Action 2024-HaverstrawT-04. Town Golf Course Drainage Improvements

Action Name:	2024-HaverstrawT-04. Town Golf Course Drainage Improvements		
Description of the Problem:	The Town Golf Course frequently becomes flooded and inundated when it rains due to poor drainage.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The Town will drill well(s) and install storage/pump system to correct drainage on golf course fairway number 13 and 16.		
Lead Agency:	Town Board		
Supporting Agencies:	Golf Course		
Estimated Cost:	High (> \$100,000)		
Potential Funding Sources:	Town Operating Budget		
Implementation Timeline:	Depends on funding		
Goals Met:	2		
Benefits:	The Town will experience less flooding in the Town Gold Course.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	N/A		
Impact on Critical Facilities/Lifelines:	N/A		
Impact on Capabilities	The Town will increase their flood capabilities.		

Impact on Future Development:	N/A		
Climate Change Considerations:	Climate change is leading to an increase in frequency and intensity of precipitation events, which leads to an increase in flooding.		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input type="checkbox"/> Medium	<input checked="" type="checkbox"/> Low
Alternatives	Action		Evaluation
	Do nothing		Problem persists
	Elevate golf course		Not feasible

Action 2024-HaverstrawT-05. Critical Facilities in the Floodplain

Action Name:	2024- HaverstrawT-05. Critical Facilities in the Floodplain	
Description of the Problem:	The following critical facilities are located floodplain and identified as vulnerable to the flood hazard from severe storm events: Camp Ramaquois, Well #2, O&R Bowline Substation, and Bowline Point Gas Power Plant. The Town does not have jurisdiction over these facilities to mitigate.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Town will work with the County to notify the facility manager/operator of these critical facilities regarding their flood vulnerability as identified during the Rockland County HMP update and NYS' requirement to protect to the 500-year flood or worst-case scenario. The Town will provide the owners information regarding grant options for funding to implement their mitigation action. Potential feasible projects may include the following: elevations, dry floodproofing, backup power supply, retrofits, or relocation. The private owners will need to determine the most cost effective and feasible mitigation action for these facilities.	
Lead Agency:	Property Owners	
Supporting Agencies:	Town Building Department	
Estimated Cost:	Low (< \$10,000)	
Potential Funding Sources:	Town Operating Budget	
Implementation Timeline:	Short-term (< 5 years)	
Goals Met:	2	
Benefits:	Low (> \$10,000)	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	N/A	
Impact on Critical Facilities/Lifelines:	This project aims to ensure the accessibility of roadways during flooding events and ensures access to emergency routes and critical facilities.	
Impact on Capabilities:	N/A	

Impact on Future Development:	This project can help mitigate potential damage along any affected roadways.		
Climate Change Considerations:	This action strengthens the Village’s capabilities in protecting critical infrastructure.		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Problem persists
	Town completes mitigation actions in inundation area		Does not reduce or eliminate risk

Action 2024-HaverstrawT-06. Roche Fire Company Building Flood Mitigation

Action Name:	2024-HaverstrawT-06. Roche Fire Company Building Flood Mitigation	
Description of the Problem:	The David B Roche Fire Company building is located in the floodplain and identified as vulnerable to the flood and severe storm hazards. This building is owned by the Fire District; the Town does not have jurisdiction to mitigate the structure.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Town will work with the Fire District to notify them of the building's vulnerability and NYS' requirement to protect the structure to the 500-year or worst-case scenario. The Town will provide the Fire District options for grant funding to implement their selected mitigation action. Potential feasible projects may include the following. The Fire District will need to determine which is the cost-effective and feasible mitigation action for this building.	
Lead Agency:	Fire District	
Supporting Agencies:	Town	
Estimated Cost:	Low (< \$10,000)	
Potential Funding Sources:	Town Operating Budget	
Implementation Timeline:	Short-term (<5 years)	
Goals Met:	2	
Benefits:	The Town will experience reduced flooding at the Roche Fire Company.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	N/A	
Impact on Critical Facilities/Lifelines:	This project aims to ensure the functionality and access the building during flooding events.	
Impact on Capabilities	It ensures that the Fire District can fulfill its duties during a flooding event.	

Impact on Future Development:	This project can help mitigate potential damage near the building.		
Climate Change Considerations:	This action strengthens the Village’s capabilities in protecting critical infrastructure.		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action	Evaluation	
	Do nothing	Problem persists	
	Elevate utilities	Does not eliminate risk	
	Identify alternate space to store trucks/equipment out of floodplain	Increases response time	

Action 2024-HaverstrawT-07. Bowline Park Shoreline Stabilization

Action Name:	2024-HaverstrawT-07. Bowline Park Shoreline Stabilization	
Description of the Problem:	The shoreline along Bowline Park is eroding which is giving way to flood events due to severe storms.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Town will armor the shoreline and construct two additional jetties on the riverside of Bowline Point Park to secure and stabilize the shoreline. This project is already in progress. The Town is in the process of getting environmental approvals.	
Lead Agency:	NYS DEC & US Army Corps of Engineers	
Supporting Agencies:	Town	
Estimated Cost:	High (> \$100,000)	
Potential Funding Sources:	FEMA (HMGP, FMA, PDM), CDBG, NYS DHSES, Town Operating Budget	
Implementation Timeline:	Long-term (>5 years)	
Goals Met:	2	
Benefits:	This action reduces flooding within the Town.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	N/A	
Impact on Critical Facilities/Lifelines:	N/A	

Impact on Capabilities	This action reduces risk from flooding.		
Impact on Future Development:	This project can help mitigate potential damage near the shoreline or surrounding areas.		
Climate Change Considerations:	This project may help the park be more able to withstand potential damage from more frequent and intense precipitation events.		
Priority: Check one	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	Do nothing		Problem persists
	Enhance existing jetties		Uneven shoreline protection

Action 2024- HaverstrawT-08. Substantial Damage Determination Training and Resources

Action Name:	Action 2024- HaverstrawT-08. Substantial Damage Determination Training and Resources		
Description of the Problem:	The municipality does not have a Substantial Damage Management Ordinance, nor do they have a standard process in place when conducting substantial damage determinations. The Town has substantial damage determination provisions in both the adopted NFIP ordinance and adopted building code, but staff are unaware of these provisions and do not leverage them.		
Hazard(s) of Concern: Check all that apply	<input checked="" type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire	
Description of the Solution:	<p>The municipality will develop a Substantial Damage Management Plan, following the six-step planning process in 2021 Developing a Substantial Damage Management Plan (https://crsresources.org/files/500/developing_subst_damage_mgmt_plan.pdf). This plan will outline responsibilities for Substantial Damage determinations, determining market value, and permit approval processes following a disaster event.</p> <p>The municipality will also take part in workshops and training sessions offered by NYSDEC to train staff on the existing provisions in the NFIP ordinance and building code.</p>		
Lead Agency:	Floodplain Administrator		
Supporting Agencies:	Building Department, Planning Board		
Estimated Cost:	Low		
Potential Funding Sources:	Municipal budget		
Implementation Timeline:	Within 5 years to develop the plan; ongoing to maintain and update the plan		
Goals Met:	2, 5, 7		
Benefits:	This plan will provide a process in making Substantial Damage Determinations and allow the municipality to make these determinations and meet NFIP requirements more quickly.		

Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Substantially damaged structures are required to be rebuilt to be compliance with current codes. Socially vulnerable populations may not have the financial means to make these improvements. This action may allow for the identification of potential resources to address substantial damages to structures owned by socially vulnerable populations.	
Impact on Critical Facilities/Lifelines:	A Substantial Damage Management Plan would include all critical facilities and lifelines in the municipality.	
Impact on Capabilities:	This action improves disaster recovery capabilities.	
Impact on Future Development:	A Substantial Damage Management Plan would include all existing, current, and future development in the municipality.	
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related disaster events. This action provides additional planning for disaster recovery.	
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No Action	No change
	Rely on state or federal resources following disaster events	Resources may not be available during major widespread events
	Establish MOUs with outside agencies to conduct Substantial Damage Determinations	A plan outlining responsibilities is still necessary to prevent missing important requirements

SECTION 9. JURISDICTIONAL ANNEXES

9.7 VILLAGE OF HAVERSTRAW

This jurisdictional annex to the Rockland County Hazard Mitigation Plan (HMP) provides information to assist public and private sectors in the Village of Haverstraw with reducing losses from future hazard events. This annex is not guidance of what to do when a disaster occurs; its focus is on actions that can be implemented prior to a disaster to reduce or eliminate damage to property and people. The annex presents a general overview of the Village of Haverstraw, describes who participated in the planning process, assesses the Village’s risk, vulnerability, and capabilities, and outlines a strategy for achieving a more resilient community.

9.7.1 Hazard Mitigation Planning Team

The Village of Haverstraw identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Village departments. The Disaster Coordinator represented the community on the Rockland County HMP Planning Partnership and Steering Committee and supported the local planning process requirements by securing input from persons with specific knowledge to enhance the plan. All departments were asked to contribute to the annex development through reviewing and contributing to the capability assessment, reporting on the status of previously identified actions, and participating in action identification and prioritization.

Table 9.7-1 summarizes Village officials who participated in the development of the annex and in what capacity. Additional documentation of the Village’s planning activities through Planning Partnership meetings is included in Volume I.

Table 9.7-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Michael Kohut, Mayor Address: 40 Main Street, Haverstraw, NY 10927 Phone Number: (845) 429-0300 ext. 17 Email: Michael.kohut@vohny.com	Name/Title: Isabel Gonzalez-Soto, Clerk Address: 40 Main Street, Haverstraw, NY 10927 Phone Number: (845) 429-0300 ext. 17 Email: Isabel.gonzalez@vohny.com
National Flood Insurance Program Floodplain Administrator	
Name/Title: Eve Mancuso, Village Engineer Address: 74 Lafayette Avenue, Suite 501, Suffern, NY 10901 Phone: (845) 357-4411 Email: Mancuso.eve@wseinc.com	
Additional Contributors	
Name/Title: Patrick McNamee, Fire Administrator Method of Participation: Attendance to Planning Partnership Kickoff	

9.7.2 Municipal Profile

The Village of Haverstraw is located in the southeastern section of the Town of Haverstraw and is bordered on the northwest by the Village of West Haverstraw, on the south by the Town of Clarkstown, and on the east by the Hudson River. The Village covers a total of 5.1 square miles, of which 3.1 square miles is water. Waterways of

significance in the village include Bowline Pond and the Hudson River along the village’s eastern boundary, and Minisceongo Creek along the northern corporate limits and in the lowland areas east of Samsondale Avenue.

Research has shown that some populations are at greater risk from hazard events because of decreased resources or physical abilities. These populations can be more susceptible to hazard events based on a number of factors including their physical and financial ability to react or respond during a hazard, and the location and construction quality of their housing. Data from the 2017-2021 American Community Survey indicates that 7.2 percent of the population is five years of age or younger, 13.2 percent is 65 years of age or older, 16.6 percent is non-English speaking, 14.6 percent is below the poverty threshold, and 12.2 percent is considered disabled.

9.7.3 Jurisdictional Capability Assessment and Integration

The Village of Haverstraw performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Volume I describes the components included in the capability assessment and their significance for hazard mitigation planning. The jurisdictional assessment for this annex includes analyses of the following:

- Planning and regulatory capabilities
- Development and permitting capabilities
- Administrative and technical capabilities
- Fiscal capabilities
- Education and outreach capabilities
- Classification under various community mitigation programs
- Adaptive capacity to withstand hazard events

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into day-to-day local government operations. As part of the hazard mitigation analysis, planning and /policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress toward plan integration. Development of an updated mitigation strategy provided an opportunity for the Village of Haverstraw to identify opportunities for integration of mitigation concepts that can be incorporated into municipal procedures.

Planning, Legal, and Regulatory Capability and Integration

Table 9.7-2 summarizes the regulatory tools that are available to Haverstraw.

Table 9.7-2. Planning, Legal, and Regulatory Capability and Integration

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
<i>Codes, Ordinances, & Regulations</i>				
Building Code	Yes	Chapter 137: Fire Prevention and Building Construction	State and Local	Building Department
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The building code is strictly enforced and meet those that are outlined in the Flood Insurance Program. The building codes address standards for withstanding storm surge, wind damage, earthquakes, or other relevant natural hazards.				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Zoning/Land Use Code	Yes	Zoning (Chapter 245), 1993	Local	Zoning, Building Inspector and Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The zoning ordinance conforms to the comprehensive plan in terms of discouraging development or redevelopment within natural hazard areas. The code includes a Mountain Protection Zone which encompasses the western side of the Village. The ordinance regulates development within, or filling of, wetlands, floodways, and floodplains.				
Subdivision Code	Yes	Subdivision of Land (Chapter 210), 1970	Federal, State and Local	Zoning, Planning Board and Building Department
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The code has a restrictive Mountain Protection Zone. Cluster subdivisions are considered to conserve environmental resources.				
Site Plan Code	Yes	Architectural Review Board (Chapter 13), 1987	Local	Planning Board and Building Department
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Hazards are considered in this process.				
Stormwater Management Code	Yes	Stormwater Management and Erosion and Sediment Control (Chapter 197), 2007	Local	Stormwater Management Officer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The stormwater ordinance is enforced with every development.				
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Real Estate Disclosure	Yes	New York State (NYS) mandate, Property Condition Disclosure Act, NY Code – Article 14 §460-467	State and Local	
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Floodplains existing on the subject property, or past flooding of property is disclosed to the potential buyer as required.				
Growth Management	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Environmental Protection Ordinance(s)	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Flood Damage Prevention Ordinance	Yes	Flood Damage Prevention (Chapter 141), 2014	Federal, State, Local	Building Inspector
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The building department reviews all construction plans and ensures proper elevations are met.				
Wellhead Protection	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Emergency Management Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Climate Change Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other: Freeboard	Yes	State mandated BFE+2 for single and two-family residential construction, BFE+1 for all other construction types	State and Local	Engineers and Building Inspector
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Yes, this is enforced through the building department, and engineering review.				
Other: Municipal Separate Storm Sewer System (MS4)	Yes	Stormwater Management and Erosion and Sediment Control (Chapter 197), 2007	State and Local	Stormwater Management Officer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Yes, this is enforced through the building department, and engineering review				
Other: Restrictions	Yes	Ordinance restricting development on steep slopes/ Mountain protection zone; Waterfront Consistency Review (Chapter 242), 2003	Local	Code Enforcement
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Yes, this is enforced through the building department, engineering review and the planning consultant review.				
Planning Documents				
General/Comprehensive Plan	Yes	Master Plan, 1980	Local	Village Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Comprehensive Plan has been recently updated and is consistent with the goals and guidelines of the HMP.				
Capital Improvement Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Disaster Debris Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Floodplain Management or Watershed Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Stormwater Management Plan	Yes	MS-4 2022 Annual Report	Local	Village Clerk
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The MS-4 Stormwater Management Plan addresses possible illicit discharges and hazards that may emanate from Village facilities.				
Open Space Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Urban Water Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Habitat Conservation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Economic Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Community Wildfire Protection Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Community Forest Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Transportation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Agriculture Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Climate Action/ Resiliency/Sustainability Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Tourism Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Business/ Downtown Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other: Local Waterfront Revitalization Program	Yes	Village of Haverstraw Local Waterfront Revitalization Program, 2003	Local	Village Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Review is performed on developments that fall within this region by the building department, engineering, and planning consultant.				
Response/Recovery Planning				
Comprehensive Emergency Management Plan	Yes	Emergency Operations Plan for the Town of Haverstraw	Local	Emergency Coordinator
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Emergency Management Plan includes short-term response and long-term recovery to address communications, evacuation, and housing necessary for identified hazards? Evacuation routes located outside of floodplains. Emergency contact lists and communication systems are in place.				
Continuity of Operations Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Substantial Damage Response Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Threat & Hazard Identification & Risk Assessment	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Post-Disaster Recovery Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Public Health Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

Development and Permitting Capability

Table 9.7-3 summarizes the capabilities of Haverstraw to oversee and track development.

Table 9.7-3. Development and Permitting Capability

Indicate if your jurisdiction implements the following	Yes/No	Comment:
Do you issue development permits? <ul style="list-style-type: none"> If you issue development permits, what department is responsible? If you do not issue development permits, what is your process for tracking new development? 	Yes	Planning Board, Building Department, Engineering and Planning
Are permits tracked by hazard area? (For example, floodplain development permits.)	No	-
Do you have a buildable land inventory? <ul style="list-style-type: none"> If you have a buildable land inventory, please describe 	No	-
Describe the level of build-out in your jurisdiction.	N/A	-

Administrative and Technical Capability

Table 9.7-4 summarizes potential staff and personnel resources available to Haverstraw and their current responsibilities that contribute to hazard mitigation.

Table 9.7-4. Administrative and Technical Capabilities

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
<i>Administrative Capability</i>		
Planning Board	Yes	The Planning Board reviews and grants approvals for site plans and subdivisions. They also make recommendations to the Zoning Board of Appeals and Village Board on zoning and planning matters.
Zoning Board of Adjustment	Yes	The Zoning Board considers appeals for variances from the zoning ordinance, appeals of decisions made by the Building Inspector, and requests for zoning interpretations.
Planning Department	No	-
Mitigation Planning Committee	No	-
Environmental Board/Commission	No	-
Open Space Board/Committee	No	-
Economic Development Commission/Committee	No	-
Public Works/Highway Department	Yes	The Department of Public Works is responsible for road maintenance and plowing of all village owned streets, maintaining all village properties and parks, street signage, brush, and leaf collection, appliance, tire, and e-waste recycling and for general village upkeep on public property and streets. The DPW will also pick up small quantities of residential construction debris, not exceeding two 35 gallon-pails per week.
Construction/Building/Code Enforcement Department	Yes	The Building Department assists residents with any construction and/or development needs in the Village. The Department ensures proper compliance of both NYS and local building code and zoning. All paperwork for the Village Planning, Zoning, and Architectural Review Board is also handled through this department.
Emergency Management/Public Safety Department	Yes	Emergency Coordinator
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	Yes	The Department of Public Works is responsible for road maintenance and plowing of all village owned streets, maintaining all village properties and parks, street signage, brush, and leaf collection, appliance, tire, and e-waste recycling and for general village upkeep on public property and streets. The DPW will also pick up small quantities of residential construction debris, not exceeding two 35-gallon pails per week.
Mutual aid agreements	Yes	Fire Department, NYSDOT, DPW
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	No	-
Other	No	-
<i>Technical/Staffing Capability</i>		
Planners or engineers with knowledge of land development and land management practices	Yes	Consultants to Building Department / Mayor
Engineers or professionals trained in building or infrastructure construction practices	Yes	Consultants to Building Department / Mayor
Planners or engineers with an understanding of natural hazards	Yes	Consultants to Building Department / Mayor
Staff with expertise or training in benefit/cost analysis	Yes	Brooker Engineering, a Weston and Sampson Company, as needed

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
Professionals trained in conducting damage assessments	Yes	Engineers, Brooker Engineering, a Weston and Sampson Company,
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	No	-
Environmental scientist familiar with natural hazards	No	-
Surveyor(s)	No	-
Emergency Manager	Yes	Emergency Coordinator
Grant writer(s)	Yes	Mayor and Brooker Engineering, a Weston and Sampson Company, Sylvia Welch (grant writer)
Resilience Officer	No	-
Other (this could include stormwater engineer, environmental specialist, etc.)	No	-

Fiscal Capability

Table 9.7-5 summarizes financial resources available to the Village of Haverstraw.

Table 9.7-5. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use? (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	Yes
Capital improvements project funding	Yes
Authority to levy taxes for specific purposes	Yes
User fees for water, sewer, gas or electric service	Yes
Impact fees for homebuyers or developers of new development/homes	No
Stormwater utility fee	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	No
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	No
Other federal or state Funding Programs	Yes
Open Space Acquisition funding programs	No
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	No

Education and Outreach Capability

Table 9.7-6 summarizes the education and outreach resources available to Haverstraw.

Table 9.7-6. Education and Outreach Capabilities

Outreach Resources	Available? (Yes/No)	Comment:
Public information officer or communications office	No	-
Personnel skilled or trained in website development	Yes	Contracted

Outreach Resources	Available? (Yes/No)	Comment:
Hazard mitigation information available on your website	Yes	Stormwater management, link to Stormwater Consortium of RC website
Social media for hazard mitigation education and outreach	Yes	Facebook, and Village website
Citizen boards or commissions that address issues related to hazard mitigation	No	-
Warning systems for hazard events	Yes	The County utilizes NY-Alert and CodeRed (the backup to NY-Alert) for emergency notifications (all Towns and Villages have access to it).
Natural disaster/safety programs in place for schools	No	-
Organizations that conduct outreach to socially vulnerable populations and underserved populations		-
Public outreach mechanisms / programs to inform citizens on natural hazards, risk, and ways to protect themselves during such events	Yes	Website, social media

Community Classifications

Table 9.7-7 summarizes classifications for community programs available to Haverstraw.

Table 9.7-7. Community Classifications

Program	Participating? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	N/A	2010
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	4	2015
New York State Department of Environmental Conservation (NYSDEC) Climate Smart Community	Yes	Member, Community Pledge	-
National Weather Service Storm Ready Certification	No	-	-
Firewise Communities classification	No	-	-
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable

— = Unavailable

Adaptive Capacity

Adaptive capacity is defined as “the ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or respond to consequences” (IPCC, 2022). Each jurisdiction has a unique combination of capabilities to adjust to, protect from, and withstand a future hazard event, future conditions, and changing risk. Table 9.7-8 summarizes the adaptive capacity for each identified hazard of concern and the Village’s capability to address related actions using the following classifications:

- Strong: Capacity exists and is in use.
- Moderate: Capacity might exist; but is not used or could use some improvement.
- Weak: Capacity does not exist or could use substantial improvement.

Table 9.7-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Disease Outbreak	Moderate
Drought	Moderate
Earthquake	Moderate
Extreme Temperature	Moderate
Flood	Moderate
Landslide	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

9.7.4 National Flood Insurance Program Compliance

This section provides specific information on the management and regulation of the regulatory floodplain, including current and future compliance with the National Flood Insurance Program (NFIP). The floodplain administrator listed in Table 9.7-1 is responsible for maintaining this information.

NFIP Summary

Table 9.7-9 summarizes the NFIP statistics for Haverstraw.

Table 9.7-9. Haverstraw NFIP Summary of Policy and Claim Statistics

# Policies	13
# Claims (Losses)	7
Total Loss Payments	\$7,768
# Repetitive Loss Properties (NFIP definition)	0
# Repetitive Loss Properties (FMA definition)	0
# Severe Repetitive Loss Properties	0
# Policies Within the 1 percent Annual Chance Flood Boundary	0

NFIP Definition of Repetitive Loss: The NFIP defines a repetitive loss property as any insurable building for which two or more claims of more than \$1,000 were paid by the NFIP within any rolling 10-year period since 1978.

FMA Definition of Repetitive Loss: FEMA’s Flood Mitigation Assistance (FMA) program defines a repetitive loss property as any insurable building that has incurred flood-related damage on two occasions, in which the cost of the repair, on average, equaled or exceeded 25 percent of the market value of the structure at the time of each such flood event.

Definition of Severe Repetitive Loss: A residential property covered under an NFIP flood insurance policy and: (a) That has at least four NFIP claim payments over \$5,000 each, and the cumulative amount of such claims payments exceeds \$20,000; or (b) For which at least two separate claims payments have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building. At least two of the claims must have occurred within any 10-year period, more than 10 days apart.

Source: FEMA, December 2023

Note: RL count may include properties also identified as SRL.

Flood Vulnerability Summary

Table 9.7-10 provides a summary of the NFIP program in Haverstraw.

Table 9.7-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	Along the Hudson River, and Miniseongo Creek
Do you maintain a list of properties that have been damaged by flooding?	Yes
Do you maintain a list of property owners interested in flood mitigation?	No
How many homeowners and/or business owners are interested in mitigation (elevation or acquisition)?	Unknown at this time.
Are any RiskMAP projects currently underway in your jurisdiction? <ul style="list-style-type: none"> If so, state what projects are underway. 	No
How do you make Substantial Damage determinations?	The building department reviews and inspects the structures. Engineering assistance is provided on an as needed basis.
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	Unknown at this time.
How many properties have been mitigated (elevation or acquisition) in your jurisdiction? <ul style="list-style-type: none"> If there are mitigation properties, how were the projects funded? 	None
Do your flood hazard maps adequately address the flood risk within your jurisdiction? <ul style="list-style-type: none"> If not, state why. 	Yes
NFIP Compliance	
What local department is responsible for floodplain management?	Building department and engineer.
Are any certified floodplain managers on staff in your jurisdiction?	Yes, through the engineering consultant
Do you have access to resources to determine possible future flooding conditions from climate change?	No
Does your floodplain management staff need any assistance or training to support its floodplain management program? <ul style="list-style-type: none"> If so, what type of assistance/training is needed? 	No
Provide an explanation of NFIP administration services you provide (e.g., permit review, GIS, education/outreach, inspections, engineering capability)	Permit review, outreach, inspections as needed.
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	Building department review of proposed plans and assistance from the engineering consultant.
What are the barriers to running an effective NFIP program in the community, if any?	None
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? <ul style="list-style-type: none"> If so, state the violations. 	No
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	September 30, 2021
What is the local law number or municipal code of your flood damage prevention ordinance?	Chapter 141 Flood Damage Prevention
What is the date that your flood damage prevention ordinance was last amended?	July 19, 2021

NFIP Topic	Comments
Does your floodplain management program meet or exceed minimum requirements? <ul style="list-style-type: none"> If exceeds, in what ways? 	Meet
Are there other local ordinances, plans or programs (e.g., site plan review) that support floodplain management and meeting the NFIP requirements? For instance, does the planning board or zoning board consider efforts to reduce flood risk when reviewing variances such as height restrictions?	Yes, elevations are considered in flood prone areas. The Building Department and engineering review process supports floodplain management through the Village’s zoning, and site plan ordinances and subdivision review process.
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	No

9.7.5 Growth/Development Trends

Understanding how past, current, and projected development patterns have or are likely to increase or decrease risk in hazard areas is a key component to appreciating a jurisdiction’s overall risk to its hazards of concern. Recent and expected future development trends, including major residential/commercial development and major infrastructure development, are summarized in Table 9.7-11 through Table 9.7-13.

Table 9.7-11. Number of Building Permits for New Construction Issued Since the Previous HMP

	New Construction Permits Issued			Total
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	
2018				
Total Permits	1	70	0	71
Permits within SFHA	0	70	0	70
2019				
Total Permits	2	0	0	2
Permits within SFHA	0	0	0	0
2020				
Total Permits	0	24	0	24
Permits within SFHA	0	24	0	24
2021				
Total Permits	2	250	0	252
Permits within SFHA	0	250	0	250
2022				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0

SFHA = Special Flood Hazard Area (1 percent flood event)

Table 9.7-12. Recent Major Development and Infrastructure from 2018 to Present

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
GDC Waterfront units	Townhouses	-	-	-	Complete
GDC Admirals Cove	Multifamily apartment building	344	River Front Lane	Flood Zone	Under construction

* Only location-specific hazard zones or vulnerabilities identified.

Table 9.7-13. Known or Anticipated Major Development and Infrastructure in the Next Five Years

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
M Pact	Mixed-use	-	-	-	Planning phase
Maple Ave Development	Multifamily apartment building	55	Maple Ave	-	Planning Phase
Dowd St Apartments	Multifamily apartment building	24	Dowd St	-	Planning phase

* Only location-specific hazard zones or vulnerabilities identified.

9.7.6 Jurisdictional Risk Assessment

The hazard profiles in Volume I provide detailed information regarding each planning partner’s vulnerability to the identified hazards, including summaries of the Village of Haverstraw’s risk assessment results and data used to determine the hazard ranking. Key local risk assessment information is presented below.

Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Village are shown in Figure 9.7-1 through Figure 9.7-2. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps are provided only for hazards that can be identified clearly using mapping techniques and technologies and for which Haverstraw has significant exposure. The maps show the location of potential new development, where available.

Figure 9.7-1. Village of Haverstraw Flood and Dam Inundation Hazard Area Extent and Location

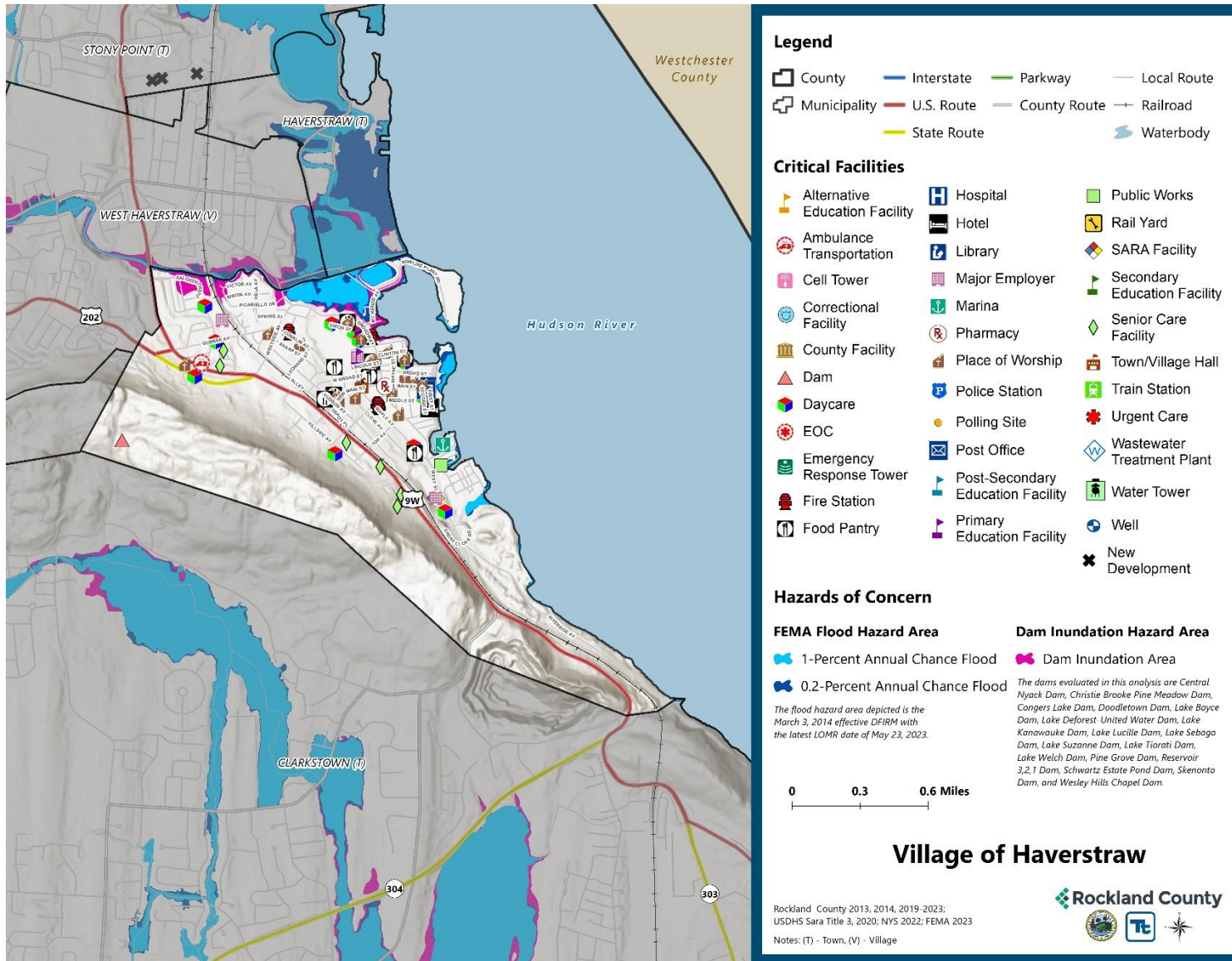
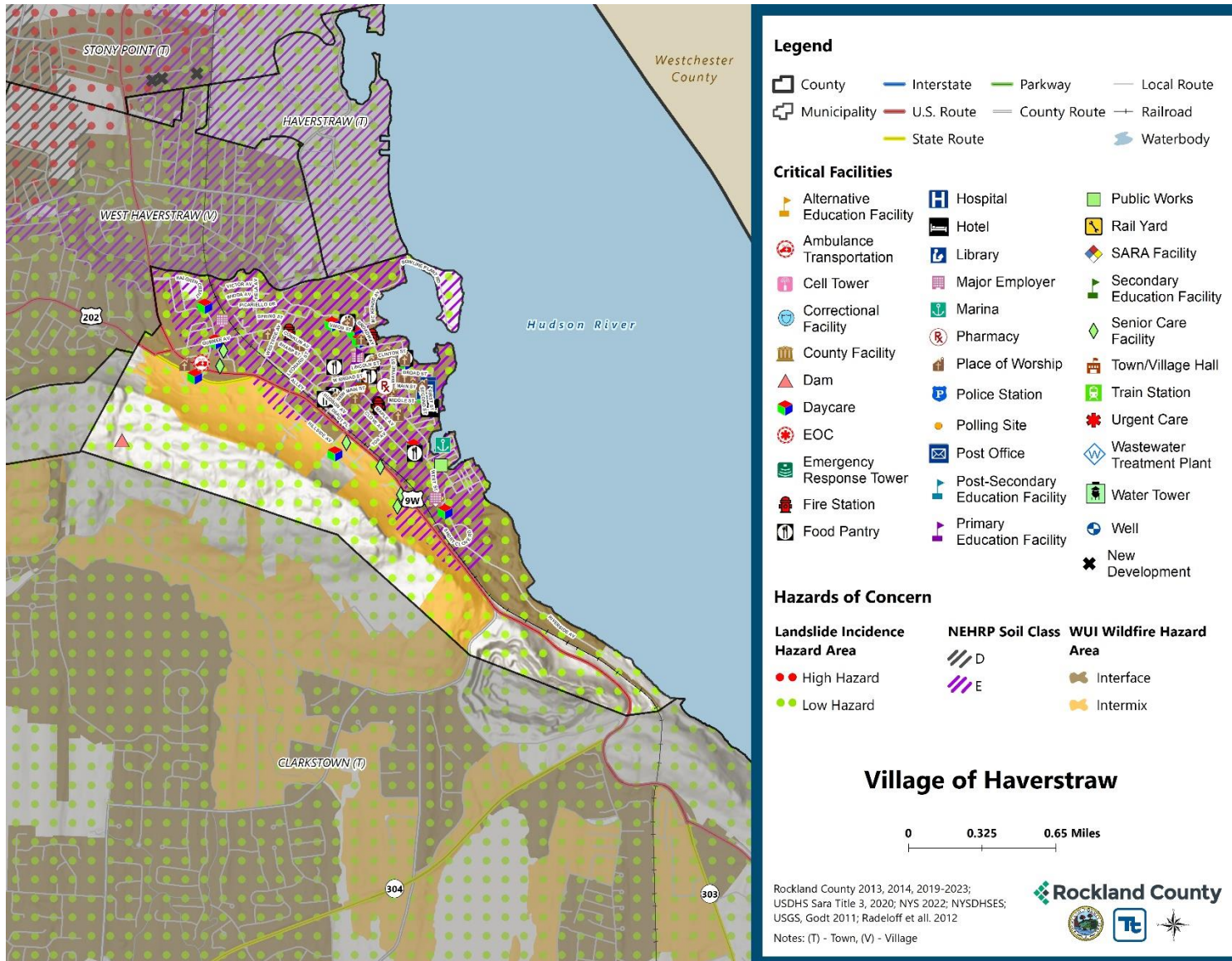


Figure 9.7-2. Village of Haverstraw Hazard Landslide, Earthquake, and Wildfire Hazard Area Extent and Location



Hazard Event History

The history of natural and non-natural hazard events in the Village of Haverstraw is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 9.7-14 provides details on loss and damage in the Village during hazard events since the last hazard mitigation plan update.

Table 9.7-14. Hazard Event History in the Village of Haverstraw

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Summary of Damage and Losses in the Village
January 20, 2020 - May 11, 2023	New York Covid-19 (3434-EM-NY, 4480-DR-NY)	Yes	The Covid-19 pandemic resulted in nationwide shutdowns, social distancing and masking requirements, and immunization efforts. Since the start of the pandemic, roughly 950 deaths have been reported in Rockland County. The federal Public Health Emergency expired in May 2023 but illness continues to occur as the virus shifts to becoming endemic.	-
April 13, 2020	High Winds		High winds across the county led to downed trees, power outages, closed roads.	\$200,000 in property damage
August 4, 2020	New York Tropical Storm Isaias (4567-DR-NY)	Yes	The center of Isaias passed about 65 miles west of New York City at 3 pm on August 4, 2020. Tropical storm force winds extended well east of the center of circulation. In addition, 1 to 3 inches of rainfall, highest west, were recorded across the county. These types of winds and rainfall across the area resulted in numerous trees and tree limbs being downed, power outages, damages to homes and automobiles, and disruption to transit.	-
August 21-24, 2021	New York Hurricane Henri (3565-EM-NY)	Yes	Rainfall from Tropical Storm Henri resulted in widespread flash flooding across southeastern New York, particularly portions of the Lower Hudson Valley. Rainfall totals generally ranged from 2-5 inches, with this rain coming in addition to the 2-5 inches that fell during the predecessor rainfall event the night before.	-

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Summary of Damage and Losses in the Village
September 1-3, 2021	New York Remnants of Hurricane Ida (3572-EM-NY, 4615-DR-NY)	Yes	Extremely heavy rainfall associated with the remnants of Hurricane Ida overspread southeast New York during the evening of September 1 and continued through the early morning hours of September 2. Rainfall totals ranged from 5-8 inches across much of the region, with much of that rain falling in just a few hours. This resulted in widespread catastrophic flash flooding.	-
July 9-10, 2023	Severe Storm, Flooding		Severe storms and flooding resulted in road closures, including portions of the Palisades Interstate Parkway, throughout Rockland County.	-

EM = Emergency Declaration (FEMA)
 FEMA = Federal Emergency Management Agency
 DR = Major Disaster Declaration (FEMA)
 N/A = Not applicable

Hazard Ranking and Vulnerabilities

The hazard profiles in Volume I have detailed information regarding each planning partner’s vulnerability to the identified hazards. The following summarizes presents key risk assessment results for the Village of Haverstraw.

Hazard Ranking

The participating jurisdictions have differing degrees of vulnerability to the hazards of concern, so each jurisdiction ranked its own degree of risk to each hazard. The community-specific hazard ranking is based on problems and impacts identified by the risk assessment presented in Volume I. The ranking process involves an assessment of the likelihood of occurrence for each hazard; the potential impacts of the hazard on people, property, and the economy; community capabilities to address the hazard; and changing future climate conditions. Haverstraw reviewed the County hazard ranking and individual results to assess the relative risk of the hazards of concern to the community. During the review of the hazard ranking, the Village indicated the following:

- The Village did not agree with the 2019 hazard rankings for Dam Failure, Disease Outbreak, Drought, Earthquake, Landslide, Severe Winter Storm, and Wildfire, but did not provide preferred ranking or reasons for potential changes. These hazard rankings have not been changed for the 2024 plan update.

Table 9.7-15 shows Haverstraw’s final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 9.7-15. Hazard Ranking

Hazard	Rank
Dam Failure	Low
Disease Outbreak	Medium
Drought	Medium
Earthquake	Medium
Extreme Temperature	Medium
Flood	Medium
Landslide	Low
Severe Weather	High
Severe Winter Weather	High
Wildfire	Medium

Note: The scale is based on the hazard rankings established in Volume I, modified as appropriate based on review by the jurisdiction

Critical Facilities

Table 9.7-16 identifies critical facilities in the community located in the 1 percent and 0.2 percent annual chance floodplains.

Table 9.7-16. Critical Facilities Flood Vulnerability

Name	Type	Exposure		Addressed by Proposed Action	Already Protected to 0.2 percent Flood Level (describe protections)
		1 percent Event	0.2 percent Event		
The Village of Haverstraw has no critical facilities located within the 1- or 0.2-percent Annual Chance Flood Hazard Area.					

Source: Rockland County 2023, FEMA

In addition to critical facilities that are exposed to flooding, there are no high hazard dams located in or that could impact the Town of Haverstraw.

Identified Issues

After review of the Village of Haverstraw’s hazard event history, hazard rankings, hazard location, and current capabilities, the Village identified the following vulnerabilities within their community:

- Mineceongo Creek experiences flash flooding during intense precipitation events, such as severe storms. There are properties in the Village that experience repetitive flood damage from severe storm events. Flood-vulnerable properties place an undue stress on the property owner and the Village. The Village has identified many roadways, specifically County owned roads, that repeatedly flood due to an increase in precipitation from severe storms and severe winter storms. Village residents are not aware of hazards that they are exposed to and what can be done to further protect themselves and their properties from damages. The hazards that the Village is at risk for include dam/levee failure, disease outbreak, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, and wildfire.

9.7.7 Mitigation Strategy and Prioritization

This section discusses past mitigation actions and status, describes proposed hazard mitigation initiatives, and prioritizes actions to address over the next five years.

Past Mitigation Initiative Status

Table 9.7-17 indicates progress on the Village's mitigation strategy identified in the 2019 HMP. Actions that are still recommended but not completed or that are in progress are carried forward and combined with new actions as part of the mitigation strategy for this plan update. Previous actions that are now ongoing programs and capabilities are indicated as such and are presented in the capability assessment earlier in this annex.

Additional Mitigation Efforts

The Village did not identify additional mitigation initiatives completed since the last HMP other than those captured in Table 9.7-17.

Table 9.7-17. Status of Previous Mitigation Actions

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
VOH-1	Bank stabilization and desilting of Mineceongo Creek	Flood, Severe Storm	Rockland County Drainage Agency, Town of Haverstraw, Village of Haverstraw	<p>Flooding and reduced stream flow</p> <p>Work needed from Section/Block/Lot 26.34-2-1 east through 26.36-1-25 following the southern bank of the Minisceongo Creek from Route 9W to Samsondale Avenue. Coordinated with Rockland County and Neighboring municipalities. (The stream is under the control of the County of Rockland.)</p>	<p>1. In Progress</p> <p>2. RCDA will be soliciting bids for the design of bank stabilization within the next few months.</p>	<p>1. Include</p> <p>2. N/A</p> <p>3. N/A</p>
VOH-2	Shoreline protection armoring of bank of Bowline Pond – end of Warren Avenue	Flood, Severe Storm	Village of Haverstraw, NYS DEC	<p>Bank degradation</p> <p>Shoreline protection armoring of bank of Bowline Pond – end of Warren Avenue. Complete permitting, then building and construction. McLaren Engineering is designing plans to fortify this area as part of a promenade project.</p>	<p>1. Completed</p> <p>2. Work completed in fall 2018</p>	<p>1. Discontinue</p> <p>2. N/A</p> <p>3. Action completed</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
VOH-3	Hire consultant to update Village comprehensive plan and Local Waterfront Revitalization Plan (LWRP)	All Hazards	CPG member; Village Trustee	Current comprehensive plan does not thoroughly incorporate natural disaster mitigation considerations. Hire consultant to update Village comprehensive plan and LWRP. Ensure that local comprehensive plans incorporate natural disaster mitigation techniques through a courtesy review or draft plans by the County Planning Department.	1. Completed 2. Comprehensive Plan and LWRP Committee constituted and meeting for 7 months. Public information gathered. Draft reports being written. Estimated Fall 2019 Draft Plan and adoption by early 2020.	1. Discontinue 2. N/A 3. Action completed
VOH-4	Update Village website to expand and disseminate information on natural hazards	All Hazards	RCOFES lead with direct participation and involvement from each jurisdiction's CPG member	Current village website is outdated and not linked to available resources. Update Village website to expand and disseminate information on natural hazards, including links to Rockland County's GIS web portal and adding more data through the Stormwater Consortium.	1. Ongoing Capability 2. N/A	1. Discontinue 2. N/A 3. This is an ongoing capability that the Village continues to make updates and share information accordingly.
VOH-5	Identify and document repetitively flooded properties.	Flood, Severe Storm	Floodplain manager, Building Department	Flood damage to property Work with owners to explore mitigation opportunities for repetitively flooded properties, and if appropriate and feasible, carry out acquisition, relocation, elevation and flood proofing measures to protect these properties.	1. Ongoing Capability 2. N/A	1. Include 2. N/A 3. N/A

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
VOH-6	Develop specific mitigation solutions for flood-prone road systems (roads, bridges, intersections, drainage, etc.)	Flood, Severe Storm	Village Highway Superintendent, County DPW	<p>Flood damage to infrastructure</p> <p>Develop specific mitigation solutions for floodprone road systems (roads, bridges, intersections, drainage, etc.) under the leadership of County DPW, including but not limited to:</p> <ul style="list-style-type: none"> • Riverside Avenue through Tilcon quarry • Lowland areas east of Samsondale Avenue 	<p>1. No Progress</p> <p>2. N/A</p>	<p>1. Include</p> <p>2. N/A</p> <p>3. N/A</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
VOH-7	Improve public awareness on hazards, prevention and mitigation through increased outreach	All Hazards	Village of Haverstraw, Rockland County	<p>Increase public awareness on all hazards</p> <p>Improve public awareness on hazards, prevention and mitigation through increased outreach, including but not limited to:</p> <ul style="list-style-type: none"> • Periodic discussion of hazard mitigation and the mitigation plan at other regular local meetings • Use of annual flyers, newsletters, advertisements, or radio/TV announcements, etc. • Incorporating as much free information as possible from the FEMA publications warehouse and other appropriate sources on the Village website 	<p>1. Ongoing Capability 2. N/A</p>	<p>1. Include 2. N/A 3. N/A</p>

Proposed Hazard Mitigation Initiatives for the HMP Update

Haverstraw participated in the mitigation strategy workshop for this HMP to identify appropriate actions to include in a local hazard mitigation strategy. Its comprehensive consideration of all possible activities to address hazards of concern included review of the following FEMA documents:

- FEMA 551 “Selecting Appropriate Mitigation Measures for Floodprone Structures” (March 2007)
- FEMA “Mitigation Ideas—A Resource for Reducing Risk to Natural Hazards” (January 2013).

The action worksheets included at the end of this annex list the mitigation actions that Haverstraw would like to pursue in the future to reduce the effects of hazards. The actions are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in the Village’s priorities.

Table 9.7-18 indicates the range of proposed mitigation action categories. The four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table to further demonstrate the wide range of activities and mitigation measures selected.

Volume I identifies 14 evaluation criteria for prioritizing the mitigation actions. To assist with rating each mitigation action as high, medium, or low priority, a numeric rank is assigned (-1, 0, or 1) for each of the evaluation criteria. Table 9.7-19 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Table 9.7-18. Analysis of Mitigation Actions by Hazard and Category

Hazard	Actions That Address the Hazard, by Action Category									
	FEMA				CRS					
	LPR	SIP	NSP	EAP	PR	PP	PI	NR	SP	ES
Dam Failure	-	-	-	1	-	-	1	-	-	-
Disease Outbreak	-	-	-	1	-	-	1	-	-	-
Drought	-	-	-	1	-	-	1	-	-	-
Earthquake	-	-	-	1	-	-	1	-	-	-
Extreme Temperature	-	-	-	1	-	-	1	-	-	-
Flood	1	2	1	1	2	2	1	1	-	-
Landslide	-	-	-	1	-	-	1	-	-	-
Severe Weather	1	2	1	1	2	2	1	1	-	-
Severe Winter Weather	-	-	-	1	-	-	1	-	-	-
Wildfire	-	-	-	1	-	-	1	-	-	-

Local Plans and Regulations (LPR)—These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.

Structure and Infrastructure Project (SIP)—These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct structures to reduce the impact of hazards.

Natural Systems Protection (NSP)—These are actions that minimize damage and losses and preserve or restore the functions of natural systems.

Education and Awareness Programs (EAP)—These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities

Preventative Measures (PR)—Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.

Property Protection (PP)—These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.

Public Information (PI)—Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.

Natural Resource Protection (NR)—Actions that minimize hazard loss and preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.

Structural Flood Control Projects (SP)—Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.

Emergency Services (ES)—Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities

Table 9.7-19. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Other Community Objectives	Total	High / Medium / Low
2024-HaverstrawT-01	Mineceongo Creek Stabilization	1	1	1	1	-1	-1	1	0	-1	1	1	1	1	0	9	Medium
2024-HaverstrawV-02	Document Flood-prone Properties	0	1	1	0	1	-1	1	0	1	1	1	1	0	1	9	Medium
2024-HaverstrawV-03	Flood-prone Roadway Mitigation Solutions	1	1	1	0	0	0	1	1	1	1	1	1	1	1	11	High
2024-HaverstrawV-04	Public Awareness and Outreach	1	0	1	0	1	1	0	1	1	1	0	1	0	1	9	Medium

Note: Volume I, Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14).

Action 2024-HaverstrawV-01. Mineceongo Creek Stabilization

Action Name:	2024-HaverstrawV-01. Mineceongo Creek Stabilization		
Description of the Problem:	Mineceongo Creek experiences flash flooding during intense precipitation events, such as severe storms.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The Village will work on Section/Block/Lot 26.34-2-1 east through 26.36-1-25 following the southern bank of the Minisceongo Creek from Route 9W to Samsondale Avenue in order to reduce flooding. The Village will coordinate with Rockland County and neighboring municipalities. (The stream is under the control of the County of Rockland.)		
Lead Agency:	Rockland County Drainage Agency		
Supporting Agencies:	Village Department of Engineering, Town of Haverstraw, Village of Haverstraw		
Estimated Cost:	Medium (\$10,000 to \$100,000)		
Potential Funding Sources:	FEMA (HMGP, FMA, PDM), CDBG, NYS DHSES, Village Operating Budget		
Implementation Timeline:	Short-term (<5 years)		
Goals Met:	2		
Benefits:	The Village will experience reduced flooding.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input checked="" type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input checked="" type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	N/A		
Impact on Critical Facilities/Lifelines:	This project could help reduce the potential impact of flooding on transportation facilities and lifelines, such as Route 9W.		
Impact on Capabilities	This action will improve flooding within the Village.		
Impact on Future Development:	This project could help reduce potential impact of flooding on nearby future development.		
Climate Change Considerations:	This project could help the creek to better withstand more intense precipitation events due to climate change.		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Problem persists

	Re-direct stream	Not feasible
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Action 2024-HaverstrawV-02. Document Flood-prone Properties

Action Name:	2024-HaverstrawV-02. Document Flood-prone Properties		
Description of the Problem:	There are properties in the Village that experience repetitive flood damage from severe storm events. Flood-vulnerable properties place an undue stress on the property owner and the Village.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The Village will work with owners located in and around the floodplain to explore mitigation opportunities for repetitively flooded properties, and if appropriate and feasible, carry out acquisition, relocation, elevation, and flood proofing measures to protect these properties.		
Lead Agency:	Village Engineer, Private Property Owners		
Supporting Agencies:	Village of Haverstraw, Building Department		
Estimated Cost:	Medium (\$10,000 to \$100,000)		
Potential Funding Sources:	FEMA (HMGP, FMA, PDM), CDBG, NYS DHSES, Village Operating Budget		
Implementation Timeline:	Short-term (<5 years)		
Goals Met:	1, 2		
Benefits:	This action will reduce the amount of flood prone properties and will increase outreach amongst the Village.		
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	This project could make it easier for the County and Village to reach homeowners with vulnerable properties.		
Impact on Critical Facilities/Lifelines:	N/A		
Impact on Capabilities	Data will help village and county design future mitigation actions and outreach to vulnerable residents.		
Impact on Future Development:	This project could help reduce potential impact of flooding on nearby future development.		
Climate Change Considerations:	This project could help identify potential areas or properties for potential buyouts or floodplain restoration projects.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low

Alternatives	Action	Evaluation
	No action	Problem persists
	Identify repetitive loss areas	Not action-driven and does not reduce or eliminate vulnerability

Action 2024-HaverstrawV-03. Flood-prone Roadway Mitigation Solutions

Action Name:	2024-HaverstrawV-03. Flood-prone Roadway Mitigation Solutions	
Description of the Problem:	The Village has identified many roadways, specifically County owned roads, that repeatedly flood due to an increase in precipitation from severe storms and severe winter storms.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Village will dDevelop specific mitigation solutions for flood-prone road systems (roads, bridges, intersections, drainage, etc.) under the leadership of County DPW, including but not limited to Riverside Avenue through Tilcon quarry and lowland areas east of Samsondale Avenue.	
Lead Agency:	Village Mayor, Village Engineer	
Supporting Agencies:	Highway Department, County Department of Public Works	
Estimated Cost:	High (> \$100,000)	
Potential Funding Sources:	Local, State	
Implementation Timeline:	Short-term (< 5 years)	
Goals Met:	1, 2	
Benefits:	This action allows for a reduction in flood events in the Village.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	N/A	
Impact on Critical Facilities/Lifelines:	This project aims to ensure the accessibility of roadways during flooding events and ensures access to emergency routes and critical facilities.	
Impact on Capabilities:	This action strengthens the Village’s capability to work with the County and improve roadways.	
Impact on Future Development:	This project can help mitigate potential damage along any affected roadways.	
Climate Change Considerations:	Climate change is leading to an increase in frequency and intensity of precipitation events, which leads to an increase in flooding.	

Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Alternatives
	No action		Problem persists
	Raise or relocate roadways		Not action-driven and does not reduce or eliminate vulnerability

Action 2024-HaverstrawV-04. Public Awareness and Outreach

Action Name:	2024-HaverstrawV-04. Public Awareness and Outreach		
Description of the Problem:	Village residents are not aware of hazards that they are exposed to and what can be done to further protect themselves and their properties from damages. The hazards that the Village is at risk for include dam/levee failure, disease outbreak, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, and wildfire.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire	
Description of the Solution:	The Village will improve public awareness on hazards, prevention, and mitigation through increased outreach, including but not limited to periodic discussion of hazard mitigation and the mitigation plan at other regular local meetings; use of annual flyers, newsletters, advertisements, or radio/TV announcements, etc.; and incorporating as much free information as possible from the FEMA publications warehouse and other appropriate sources on the Village website.		
Lead Agency:	Village Mayor		
Supporting Agencies:	Rockland County Office of Emergency Services		
Estimated Cost:	Low (< \$10,000)		
Potential Funding Sources:	Operating Budget		
Implementation Timeline:	Short-term (< 5 years)		
Goals Met:	3		
Benefits:	This action aims to educate Village residents.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	This initiative aims to reach populations that are low-income, do not speak English, and have limited internet access or technical capabilities.		
Impact on Critical Facilities/Lifelines:	N/A		

Impact on Capabilities:	This action strengthens the Village education and outreach capabilities.		
Impact on Future Development:	N/A		
Climate Change Considerations:	Climate change is leading to an increase in frequency and intensity of precipitation events.		
Priority: Check one	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Alternatives
	No action		Problem persists
	Update website without linking to other resources		Would not reach those with limited internet or technology; not preferred

SECTION 9. JURISDICTIONAL ANNEXES

9.8 VILLAGE OF HILLBURN

This jurisdictional annex to the Rockland County Hazard Mitigation Plan (HMP) provides information to assist public and private sectors in the Village of Hillburn with reducing losses from future hazard events. This annex is not guidance of what to do when a disaster occurs; its focus is on actions that can be implemented prior to a disaster to reduce or eliminate damage to property and people. The annex presents a general overview of the Village of Hillburn, describes who participated in the planning process, assesses the Village’s risk, vulnerability, and capabilities, and outlines a strategy for achieving a more resilient community.

9.8.1 Hazard Mitigation Planning Team

The Village of Hillburn identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Village departments. The Mayor represented the community on the Rockland County HMP Planning Partnership and Steering Committee and supported the local planning process requirements by securing input from persons with specific knowledge to enhance the plan. All departments were asked to contribute to the annex development through reviewing and contributing to the capability assessment, reporting on the status of previously identified actions, and participating in action identification and prioritization.

Table 9.8-1 summarizes Village officials who participated in the development of the annex and in what capacity. Additional documentation of the Village’s planning activities through Planning Partnership meetings is included in Volume I.

Table 9.8-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Joseph P. Tursi, Mayor Address: 31 Mountain Avenue, Hillburn, NY 10931 Phone Number: 845-357-2036 Email: hillburnmain@optonline.net	Name/Title: Bernadette Tarantino, Deputy Mayor Address: 31 Mountain Avenue, Hillburn, NY 10931 Phone Number: 845-357-2036 Email: hillburnmain@optonline.net
National Flood Insurance Program Floodplain Administrator	
Name/Title: Eve Mancuso, Village Engineer Address: 74 Lafayette Avenue, Suite 501, Suffern, NY 10901 Phone: (845) 357-4411 Email: Mancuso.eve@wseinc.com	
Additional Contributors	
Name/Title: Robin Miele, Clerk/Treasurer Participation: Provided information to update municipal annex	

9.8.2 Municipal Profile

The Village of Hillburn is located in the Town of Ramapo in Rockland County. It is approximately 40 miles from New York City. The Village is bordered to the north and west by the Town of Ramapo, to the south by New Jersey, and to the east by the Village of Suffern. The Ramapo River flows through the Village, following Interstate 87. The Village has a total area of 2.2 square miles.

Research has shown that some populations are at greater risk from hazard events because of decreased resources or physical abilities. These populations can be more susceptible to hazard events based on a number of factors including their physical and financial ability to react or respond during a hazard, and the location and construction quality of their housing. Data from the 2017-2021 American Community Survey indicates that 10.3 percent of the population is five years of age or younger, 14.5 percent is 65 years of age or older, 4.3 percent is non-English speaking, 13.9 percent is below the poverty threshold, and 13.1 percent is considered disabled.

9.8.3 Jurisdictional Capability Assessment and Integration

The Village of Hillburn performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Volume I describes the components included in the capability assessment and their significance for hazard mitigation planning. The jurisdictional assessment for this annex includes analyses of the following:

- Planning and regulatory capabilities
- Development and permitting capabilities
- Administrative and technical capabilities
- Fiscal capabilities
- Education and outreach capabilities
- Classification under various community mitigation programs
- Adaptive capacity to withstand hazard events

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into day-to-day local government operations. As part of the hazard mitigation analysis, planning and /policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress toward plan integration. Development of an updated mitigation strategy provided an opportunity for the Village of Hillburn to identify opportunities for integration of mitigation concepts that can be incorporated into municipal procedures.

Planning, Legal, and Regulatory Capability and Integration

Table 9.8-2 summarizes the regulatory tools that are available to Hillburn.

Table 9.8-2. Planning, Legal, and Regulatory Capability and Integration

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Codes, Ordinances, & Regulations				
Building Code	Yes	Chapter 80 – Building Construction and Fire Prevention	State and Local	Building and Fire Inspector
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Village of Hillburn has adopted the NYS Building Construction Code and the NYS Fire Prevention Code.				
Zoning/Land Use Code	Yes	Chapter 250 – Zoning	Local	Zoning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Village of Hillburn adopted an updated Zoning Code and Comprehensive Plan in January 2020, that includes regulations regarding Ridgeline Protection and Floodplain Development.				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Subdivision Code	Yes	Chapter 210 – Subdivision and Site Plan Regulations	Local	Village
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Hazard Mitigation Plan is a factor considered in all Planning Board reviews.				
Site Plan Code	Yes	Chapter 210 – Subdivision and Site Plan Regulations	Local	Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Hazard Mitigation Plan is a factor considered in all Planning Board reviews.				
Stormwater Management Code	Yes	Chapter 198 – Stormwater Management	Local	Stormwater Management Officer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Stormwater Management Officer (Village Engineer) considers the Hazard Mitigation Plan during MS-4 reporting.				
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Real Estate Disclosure	Yes	New York State (NYS) mandate, Property Condition Disclosure Act, NY Code – Article 14 §460-467	State and local	
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Yes, by others – it is not a Village responsibility.				
Growth Management	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Environmental Protection Ordinance(s)	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Flood Damage Prevention Ordinance	Yes	Chapter 130 – Flood Damage Prevention	Federal, State, Local	Village Engineer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Village’s Floodplain Administrator (Village Engineer) considers the Hazard Mitigation Plan when reviewing all applications.				
Wellhead Protection	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Emergency Management Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Climate Change Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other: Freeboard	Yes	State mandated BFE+2 for single and two-family residential construction, BFE+1 for all other construction types	State and Local	Village Engineer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Village Engineer and Building Department considers the Hazard Mitigation Plan when reviewing all applications.				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Other: Municipal Separate Storm Sewer System (MS4)	Yes	Chapter 198 – Stormwater Management	Local	Stormwater Management Officer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The Village Engineer considers the Hazard Mitigation Plan when preparing the annual MS-4 Report.				
Planning Documents				
General/Comprehensive Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Capital Improvement Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Disaster Debris Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Floodplain Management or Watershed Plan	Yes	Village Code Chapter 130 – Flood Damage Prevention, 2014	Local	Village Engineer and Local Administration
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
MS-4 Watershed Plan will be considered.				
Stormwater Management Plan	Yes	Village Code Chapter 198 – Stormwater Management, 2008	Local	Stormwater Management Officer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
Each project is scrutinized to insure proper compliance to the requirements detailed in the Village’s Stormwater Management Plan, including but not limited to compliance to the NYS Stormwater Management Design Manual, the NY Standards and Specifications for Erosion and Sediment Control, and SWPPP requirements.				
Open Space Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Urban Water Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Habitat Conservation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Economic Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Community Wildfire Protection Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Community Forest Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Transportation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Agriculture Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Climate Action/ Resiliency/Sustainability Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Tourism Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Business/ Downtown Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other (for example NYRCR, etc.)	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Response/Recovery Planning				
Comprehensive Emergency Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Continuity of Operations Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Substantial Damage Response Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Threat & Hazard Identification & Risk Assessment	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Post-Disaster Recovery Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Public Health Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

Development and Permitting Capability

Table 9.8-3 summarizes the capabilities of Hillburn to oversee and track development.

Table 9.8-3. Development and Permitting Capability

Indicate if your jurisdiction implements the following	Yes/No	Comment:
Do you issue development permits? <ul style="list-style-type: none"> If you issue development permits, what department is responsible? If you do not issue development permits, what is your process for tracking new development? 	No	-
Are permits tracked by hazard area? (For example, floodplain development permits.)	Yes	Floodplain Development Permits are issued by the Floodplain Administer, the Village Engineer
Do you have a buildable land inventory? <ul style="list-style-type: none"> If you have a buildable land inventory, please describe 	No	-
Describe the level of build-out in your jurisdiction.	N/A	-

Administrative and Technical Capability

Table 9.8-4 summarizes potential staff and personnel resources available to Hillburn and their current responsibilities that contribute to hazard mitigation.

Table 9.8-4. Administrative and Technical Capabilities

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
<i>Administrative Capability</i>		
Planning Board	Yes	The planning board uses the Village’s zoning local law, Rockland County Department of Planning, and floodplain administration to guide their decisions with respect to natural hazard risk management.
Zoning Board of Adjustment	Yes	The zoning board uses the Village’s zoning local law, Rockland County Department of Planning, and floodplain administration to guide their decisions with respect to natural hazard risk management.
Planning Department	No	-
Mitigation Planning Committee	No	-
Environmental Board/Commission	No	-
Open Space Board/Committee	No	-
Economic Development Commission/Committee	No	-
Public Works/Highway Department	Yes	The Public Works Department is responsible for household trash and recycling pick-up, the maintenance of Village facilities and grounds.
Construction/Building/Code Enforcement Department	No	-
Emergency Management/Public Safety Department	Yes	Police services are provided to the Village of Hillburn by the Town of Ramapo Police Department. Hillburn Fire Department is a volunteer department which services the Village.

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	Yes	The Public Works Department is responsible for household trash and recycling pick-up, the maintenance of Village facilities and grounds.
Mutual aid agreements	Yes	Police
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	Yes	There are no job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk.
Other: Community Forestry Council	Yes	It is the responsibility of the Council to study, investigate, counsel, develop and/or update annually a written plan for the care, preservation, pruning, planting, replanting, removal or disposition of trees, shrubs and bushes in parks, along streets and in other public areas, including easements.
<i>Technical/Staffing Capability</i>		
Planners or engineers with knowledge of land development and land management practices	Yes	Village Engineer
Engineers or professionals trained in building or infrastructure construction practices	Yes	Village Engineer
Planners or engineers with an understanding of natural hazards	Yes	Village Engineer
Staff with expertise or training in benefit/cost analysis	Yes	Village Engineer
Professionals trained in conducting damage assessments	Yes	Village Engineer
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	No	-
Environmental scientist familiar with natural hazards	No	-
Surveyor(s)	No	-
Emergency Manager	No	-
Grant writer(s)	No	-
Resilience Officer	No	-
Other (this could include stormwater engineer, environmental specialist, etc.)	No	-

Fiscal Capability

Table 9.8-5 summarizes financial resources available to Hillburn.

Table 9.8-5. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use? (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	No
Capital improvements project funding	Yes – Hillburn Village Board
Authority to levy taxes for specific purposes	Yes – Hillburn Village Board
User fees for water, sewer, gas or electric service	Yes – Hillburn Village Board
Impact fees for homebuyers or developers of new development/homes	No

Financial Resources	Accessible or Eligible to Use? (Yes/No)
Stormwater utility fee	No
Incur debt through general obligation bonds	Yes – Hillburn Village Board
Incur debt through special tax bonds	No
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	No
Other federal or state Funding Programs	Yes – Hillburn Village Board; Consolidated Local Street and Highway Improvement Program (CHIPs) through NYSDOT
Open Space Acquisition funding programs	No
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	No

Education and Outreach Capability

Table 9.8-6 summarizes the education and outreach resources available to Hillburn.

Table 9.8-6. Education and Outreach Capabilities

Outreach Resources	Available? (Yes/No)	Comment:
Public information officer or communications office	No	-
Personnel skilled or trained in website development	Yes	Contracted
Hazard mitigation information available on your website	No	-
Social media for hazard mitigation education and outreach	No	-
Citizen boards or commissions that address issues related to hazard mitigation	No	-
Warning systems for hazard events	Yes	The County utilizes NY-Alert and CodeRed (the backup to NY-Alert) for emergency notifications (all Towns and Villages have access to it).
Natural disaster/safety programs in place for schools	No	-
Organizations that conduct outreach to socially vulnerable populations and underserved populations		
Public outreach mechanisms / programs to inform citizens on natural hazards, risk, and ways to protect themselves during such events	No	-
If yes, please describe.	-	-

Community Classifications

Table 9.8-7 summarizes classifications for community programs available to Hillburn.

Table 9.8-7. Community Classifications

Program	Participating? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	Class 4	March 3, 2011
New York State Department of Environmental Conservation (NYSDEC) Climate Smart Community	No	-	-
National Weather Service Storm Ready Certification	No	-	-

Program	Participating? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Firewise Communities classification	No	-	-
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable
 — = Unavailable

Adaptive Capacity

Adaptive capacity is defined as “the ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or respond to consequences” (IPCC, 2022). Each jurisdiction has a unique combination of capabilities to adjust to, protect from, and withstand a future hazard event, future conditions, and changing risk. Table 9.8-8 summarizes the adaptive capacity for each identified hazard of concern and the Village’s capability to address related actions using the following classifications:

- Strong: Capacity exists and is in use.
- Moderate: Capacity might exist; but is not used or could use some improvement.
- Weak: Capacity does not exist or could use substantial improvement.

Table 9.8-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Disease Outbreak	Moderate
Drought	Moderate
Earthquake	Moderate
Extreme Temperature	Moderate
Flood	Moderate
Landslide	Weak
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

9.8.4 National Flood Insurance Program Compliance

This section provides specific information on the management and regulation of the regulatory floodplain, including current and future compliance with the National Flood Insurance Program (NFIP). The floodplain administrator listed in Table 9.8-1 is responsible for maintaining this information.

NFIP Summary

Table 9.8-9 summarizes the NFIP statistics for Hillburn.

Table 9.8-9. Hillburn NFIP Summary of Policy and Claim Statistics

# Policies	3
# Claims (Losses)	33

# Policies	3
Total Loss Payments	\$1,222,574
# Repetitive Loss Properties (NFIP definition)	0
# Repetitive Loss Properties (FMA definition)	2
# Severe Repetitive Loss Properties	1
# Policies Within the 1 percent Annual Chance Flood Boundary	1

NFIP Definition of Repetitive Loss: The NFIP defines a repetitive loss property as any insurable building for which two or more claims of more than \$1,000 were paid by the NFIP within any rolling 10-year period since 1978.

FMA Definition of Repetitive Loss: FEMA’s Flood Mitigation Assistance (FMA) program defines a repetitive loss property as any insurable building that has incurred flood-related damage on two occasions, in which the cost of the repair, on average, equaled or exceeded 25 percent of the market value of the structure at the time of each flood event.

Definition of Severe Repetitive Loss: A residential property covered under an NFIP flood insurance policy and: (a) That has at least four NFIP claim payments over \$5,000 each, and the cumulative amount of such claims payments exceeds \$20,000; or (b) For which at least two separate claims payments have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building. At least two of the claims must have occurred within any 10-year period, more than 10 days apart.

Source: FEMA, December 2023

Note: RL count may include properties also identified as SRL.

Flood Vulnerability Summary

Table 9.8-10 provides a summary of the NFIP program in Hillburn.

Table 9.8-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	The Village refers to the Flood Map to determine if a property is in the Floodplain.
Do you maintain a list of properties that have been damaged by flooding?	A list is not maintained.
Do you maintain a list of property owners interested in flood mitigation?	No
How many homeowners and/or business owners are interested in mitigation (elevation or acquisition)?	
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what projects are underway.	No
How do you make Substantial Damage determinations?	Building Department review.
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	None
How many properties have been mitigated (elevation or acquisition) in your jurisdiction? • If there are mitigation properties, how were the projects funded?	None declared recently
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If not, state why.	Unknown at this time
NFIP Compliance	
What local department is responsible for floodplain management?	Village Engineer

NFIP Topic	Comments
Are any certified floodplain managers on staff in your jurisdiction?	Yes
Do you have access to resources to determine possible future flooding conditions from climate change?	No
Does your floodplain management staff need any assistance or training to support its floodplain management program? <ul style="list-style-type: none"> If so, what type of assistance/training is needed? 	No
Provide an explanation of NFIP administration services you provide (e.g., permit review, GIS, education/outreach, inspections, engineering capability)	N/A
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	Review of application by the respective authority (i.e. Building Inspector, Village Engineer, Planning Board, etc.)
What are the barriers to running an effective NFIP program in the community, if any?	N/A
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? <ul style="list-style-type: none"> If so, state the violations. 	No
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	June 27, 2019
What is the local law number or municipal code of your flood damage prevention ordinance?	Hillburn Village Code Chapter 130
What is the date that your flood damage prevention ordinance was last amended?	2014
Does your floodplain management program meet or exceed minimum requirements? <ul style="list-style-type: none"> If exceeds, in what ways? 	Meets
Are there other local ordinances, plans or programs (e.g., site plan review) that support floodplain management and meeting the NFIP requirements? For instance, does the planning board or zoning board consider efforts to reduce flood risk when reviewing variances such as height restrictions?	N/A
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	No

9.8.5 Growth/Development Trends

Understanding how past, current, and projected development patterns have or are likely to increase or decrease risk in hazard areas is a key component to appreciating a jurisdiction’s overall risk to its hazards of concern. Recent and expected future development trends, including major residential/commercial development and major infrastructure development, are summarized in Table 9.8-11 through Table 9.8-13.

Table 9.8-11. Number of Building Permits for New Construction Issued Since the Previous HMP

	New Construction Permits Issued			Total
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	
2018				
Total Permits	N/A – The Village does not issue building permits.			
Permits within SFHA				

	New Construction Permits Issued			Total
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	
2019				
Total Permits	N/A – The Village does not issue building permits.			
Permits within SFHA	N/A – The Village does not issue building permits.			
2020				
Total Permits	N/A – The Village does not issue building permits.			
Permits within SFHA	N/A – The Village does not issue building permits.			
2021				
Total Permits	N/A – The Village does not issue building permits.			
Permits within SFHA	N/A – The Village does not issue building permits.			
2022				
Total Permits	N/A – The Village does not issue building permits.			
Permits within SFHA	N/A – The Village does not issue building permits.			

SFHA = Special Flood Hazard Area (1 percent flood event)

Table 9.8-12. Recent Major Development and Infrastructure from 2018 to Present

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
No major development and infrastructure reported.					

* Only location-specific hazard zones or vulnerabilities identified.

Table 9.8-13. Known or Anticipated Major Development and Infrastructure in the Next Five Years

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
6th St. Culvert	Culvert	N/A	6th St.	N/A	Out to Bid

* Only location-specific hazard zones or vulnerabilities identified.

9.8.6 Jurisdictional Risk Assessment

The hazard profiles in Volume I provide detailed information regarding each planning partner’s vulnerability to the identified hazards, including summaries of the Village of Hillburn risk assessment results and data used to determine the hazard ranking. Key local risk assessment information is presented below.

Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Village are shown in Figure 9.8-1 through Figure 9.8-2. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps are provided only for hazards that can be identified clearly using mapping techniques and technologies and for which Hillburn has significant exposure. The maps show the location of potential new development, where available.

Figure 9.8-1. Village of Hillburn Flood and Dam Inundation Hazard Area Extent and Location

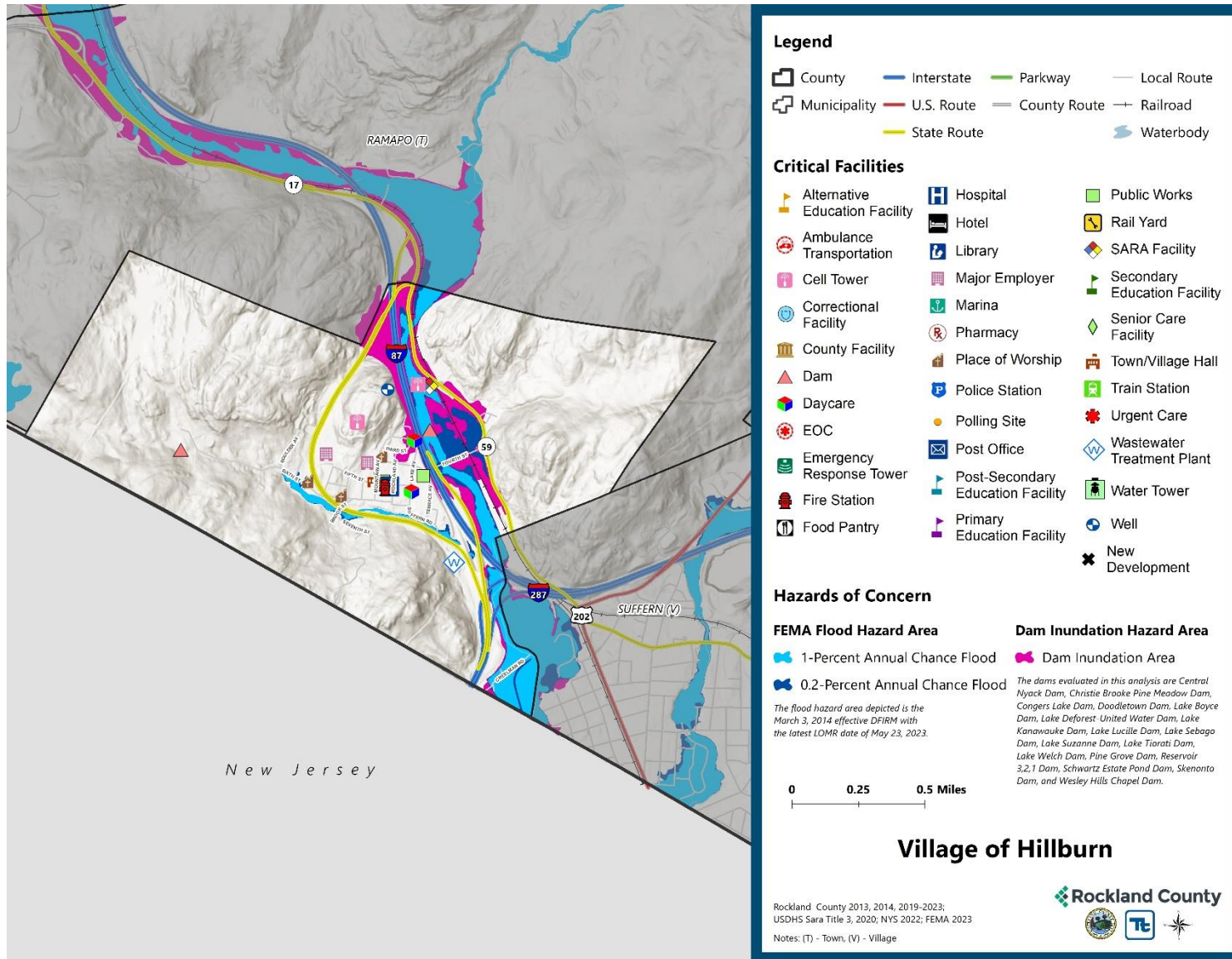
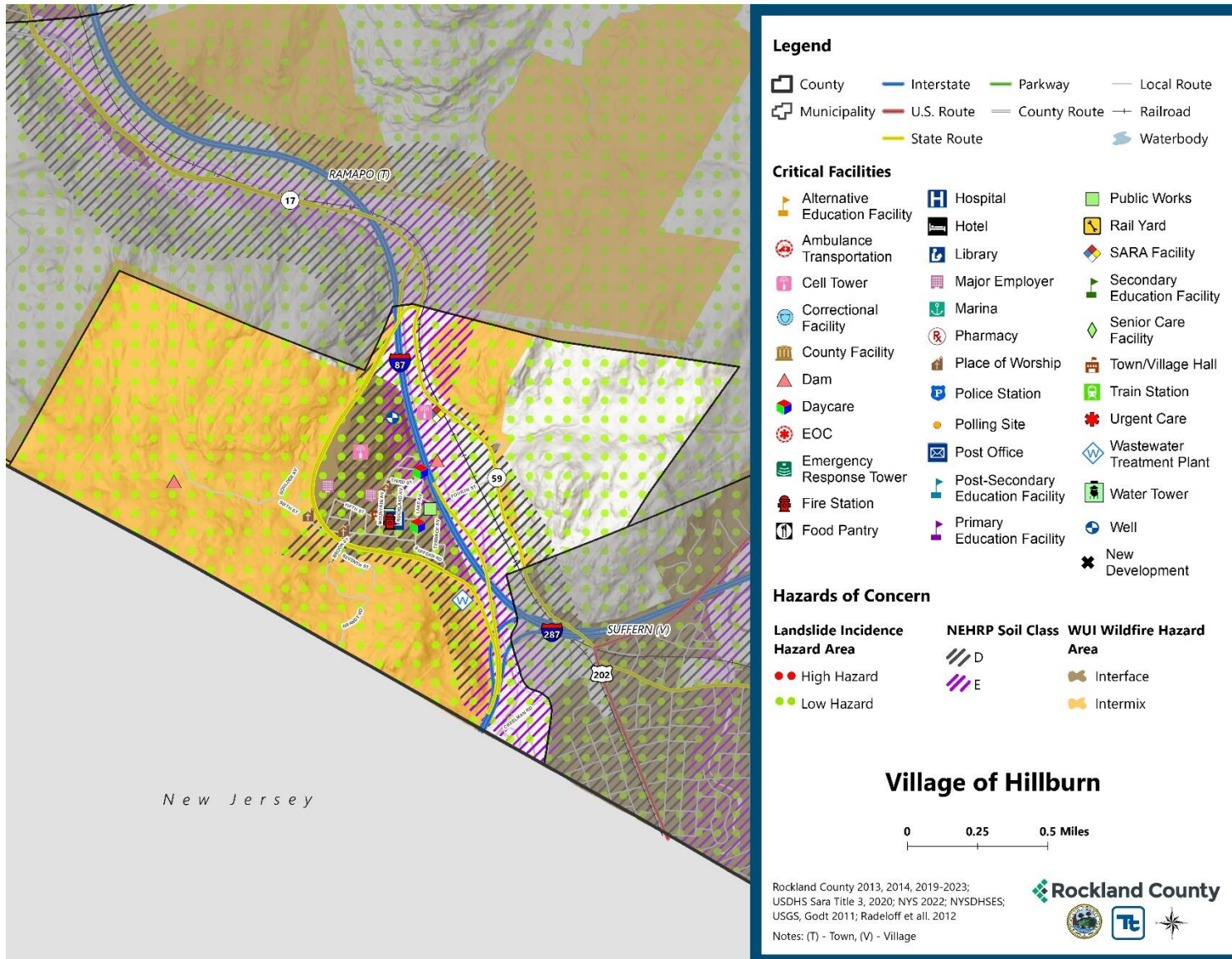


Figure 9.8-2. Village of Hillburn Landslide, Earthquake, and Wildfire Hazard Area Extent and Location



Hazard Event History

The history of natural and non-natural hazard events in the Village of Hillburn is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 9.8-14 provides details on loss and damage in the Village during hazard events since the last hazard mitigation plan update.

Table 9.8-14. Hazard Event History in the Village of Hillburn

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Summary of Damage and Losses in the Village
January 20, 2020 - May 11, 2023	New York Covid-19 (3434-EM-NY, 4480-DR-NY)	Yes	The Covid-19 pandemic resulted in nationwide shutdowns, social distancing and masking requirements, and immunization efforts. Since the start of the pandemic, roughly 950 deaths have been reported in Rockland County. The federal Public Health Emergency expired in May 2023 but illness continues to occur as the virus shifts to becoming endemic.	-
April 13, 2020	High Winds	No	High winds across the county led to downed trees, power outages, closed roads,	\$200,000 in property damage
August 4, 2020	New York Tropical Storm Isaias (4567-DR-NY)	Yes	The center of Isaias passed about 65 miles west of New York City at 3 pm on August 4, 2020. Tropical storm force winds extended well east of the center of circulation. In addition, 1 to 3 inches of rainfall, highest west, were recorded across the county. These types of winds and rainfall across the area resulted in numerous trees and tree limbs being downed, power outages, damages to homes and automobiles, and disruption to transit.	-
August 21-24, 2021	New York Hurricane Henri (3565-EM-NY)	Yes	Rainfall from Tropical Storm Henri resulted in widespread flash flooding across southeastern New York, particularly portions of the Lower Hudson Valley. Rainfall totals generally ranged from 2-5 inches, with this rain coming in addition to the 2-5 inches that fell during the predecessor rainfall event the night before.	-

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Summary of Damage and Losses in the Village
September 1-3, 2021	New York Remnants of Hurricane Ida (3572-EM-NY, 4615-DR-NY)	Yes	Extremely heavy rainfall associated with the remnants of Hurricane Ida overspread southeast New York during the evening of September 1 and continued through the early morning hours of September 2. Rainfall totals ranged from 5-8 inches across much of the region, with much of that rain falling in just a few hours. This resulted in widespread catastrophic flash flooding.	6 th Street Culvert affected
July 9-10, 2023	Severe Storm, Flooding	No	Severe storms and flooding resulted in road closures, including portions of the Palisades Interstate Parkway, throughout Rockland County.	-

EM = Emergency Declaration (FEMA)
 FEMA = Federal Emergency Management Agency
 DR = Major Disaster Declaration (FEMA)
 N/A = Not applicable

Hazard Ranking and Vulnerabilities

The hazard profiles in Volume I have detailed information regarding each planning partner’s vulnerability to the identified hazards. The following summarizes presents key risk assessment results for the Village of Hillburn.

Hazard Ranking

The participating jurisdictions have differing degrees of vulnerability to the hazards of concern, so each jurisdiction ranked its own degree of risk to each hazard. The community-specific hazard ranking is based on problems and impacts identified by the risk assessment presented in Volume I. The ranking process involves an assessment of the likelihood of occurrence for each hazard; the potential impacts of the hazard on people, property, and the economy; community capabilities to address the hazard; and changing future climate conditions. Hillburn reviewed the County hazard ranking and individual results to assess the relative risk of the hazards of concern to the community. During the review of the hazard ranking, the Village indicated the following:

- The Village has no history of earthquake events and revised the hazard ranking to Low.
- The Village has steep slopes and revised the hazard ranking for Landslides to Medium.
- The Village agreed with the Wildfire hazard ranking and noted that the Village is adjacent to larger forested areas.

Table 9.8-15 shows Hillburn’s final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 9.8-15. Hazard Ranking

Hazard	Rank
Dam Failure	Low
Disease Outbreak	Medium
Drought	Medium
Earthquake	Low
Extreme Temperature	Medium
Flood	Medium
Landslide	Medium
Severe Weather	High
Severe Winter Weather	High
Wildfire	Medium

Note: The scale is based on the hazard rankings established in Volume I, modified as appropriate based on review by the jurisdiction

Critical Facilities

Table 9.8-16 identifies critical facilities in the community located in the 1-percent and 0.2-percent annual chance floodplains.

Table 9.8-16. Critical Facilities Flood Vulnerability

Name	Type	Exposure		Addressed by Proposed Action	Already Protected to 0.2 percent Flood Level (describe protections)
		1 percent Event	0.2 percent Event		
Hillburn Dam	Dam	Yes	Yes	2024-HillburnV-07	No
Verizon Wir 128	Cell Tower	Yes	Yes	2024-HillburnV-07	No

Source: Rockland County 2023, FEMA

In addition to critical facilities that are exposed to flooding, there are no high hazard dams located in or that could impact Hillburn.

Identified Issues

After review of the Village of Hillburn’s hazard event history, hazard rankings, hazard location, and current capabilities, the Village of Hillburn identified the following vulnerabilities within their community:

- The Village works with various agencies, associations, and the public to implement monitoring and warning systems, however, lacks an automated notification system for Village residents to increase awareness of hazard events and related impacts such as dam/levee failure, disease outbreak, droughts, earthquakes, extreme temperatures, floods, landslides, severe storms, severe winter storms, and wildfire.
- The culvert on Brook Street is undersized and is leading to flooding from and influx of severe storms.
- There are properties in the Village that experience repetitive flood damage from severe storm events. Flood-vulnerable properties place an undue stress on the property owner and the Village.
- The Village has identified many roadways, specifically County owned roads, that repeatedly flood due to an increase in precipitation from severe storms and severe winter storms.

- Village residents are not aware of hazards that they are exposed to and what can be done to further protect themselves and their properties from damages. The hazards that the Village is at risk for include dam/levee failure, disease outbreak, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, and wildfire.
- The Village's floodplain management and ordinance enforcement staff are not Certified Floodplain Managers and flooding is becoming more common and frequent from severe storms and severe winter storms.
- There are multiple critical facilities in the floodplain in the Village that are impacted by floods and severe storms, including the St. Lawrence Center, O&R Hillburn Substation, Hillburn Dam and a cellular tower owned by Verizon. The Village has jurisdiction over the Hillburn Dam, but the rest of these facilities are privately owned.
- The Fourth Street pump station is located in the floodplain and is vulnerable to flooding from severe storm events.

9.8.7 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and prioritizes actions to address over the next five years.

Past Mitigation Initiative Status

Table 9.8-17 indicates progress on the Village's mitigation strategy identified in the 2019 HMP. Actions that are still recommended but not completed or that are in progress are carried forward and combined with new actions as part of the mitigation strategy for this plan update. Previous actions that are now ongoing programs and capabilities are indicated as such and are presented in the capability assessment earlier in this annex.

Additional Mitigation Efforts

The Village did not identify additional mitigation efforts completed other than the mitigation initiatives completed in Table 9.8-17.

Table 9.8-17. Status of Previous Mitigation Actions

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
Hillburn-1	Community Rating System (CRS)	Flood	Village	The Village is not in the CRS program. Consider joining the Community Rating System (CRS).	1. Complete 2. Determined to have no significant community interest or benefit.	1. Discontinue 2. N/A 3. The Village has opted to not join CRS due to limited community interest and benefit.
Hillburn-2	Automated Notification System	All Hazards	Village	Currently, there is no automated notification system for village residents. Automated telephone notification system for Village residents.	1. No progress 2. N/A	1. Include 2. N/A 3. N/A
Hillburn-3	Culvert Upgrades	Flood, Severe Storm	Village	The culvert on Brook Street is undersized and contributes to flooding issues. Upgrade and replace the culvert on Brook Street to increase its capacity.	1. No progress 2. N/A	1. Include 2. N/A 3. N/A
Hillburn-4	Public Workshops	All Hazards	Village	Current zoning and planning issues need to incorporate natural hazards and hazard mitigation. Hold periodic workshops regarding zoning and planning issues that arise regarding natural hazards and hazard mitigation.	1. Ongoing Capability 2. N/A	1. Discontinue 2. N/A 3. The Village can host these workshops on an as-needed basis.

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
Hillburn-5	Floodplain Management Best Practices	Flood	Village	Best management practices need to stay up to date to ensure properties are protected in the floodplain areas Continue to implement best management practices for floodplain areas.	1. Ongoing Capability 2. N/A	1. Discontinue 2. N/A 3. The Village can update or revise their practices on an as-needed basis if changes to their vulnerabilities arise.
Hillburn-6	Identify and document flooded properties	Flood	Village	Flood-vulnerable properties place an undue stress on the property owner and village and efforts should be made to mitigate them. Identify and document flooded properties. Work with owners to explore mitigation opportunities for flooded properties, and if appropriate and feasible, carry out acquisition, relocation, elevation and floodproofing measures to protect these properties.	1. Ongoing Capability 2. N/A	1. Include 2. N/A 3. N/A
Hillburn-7	Flood-prone Roadways	Severe Storm, Flood	Village Trustee	Flood prone roads can inhibit emergency response and evacuation during a flood. Develop specific mitigation solutions for flood prone road systems (roads, bridges, intersections, drainage, etc.) under the leadership of County DPW.	1. No Progress 2. N/A	1. Include 2. Identify specific roadways that may be suited for a project. 3. N/A

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
Hillburn-8	Critical Facilities Protection	All Hazards	Village Trustee	<p>Some facilities were built before code updates; therefore, they may be more susceptible to damage from a hazard event.</p> <p>Determine the year built and level of protection for critical emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide some degree of protection from natural hazards and pursue potential mitigation opportunities to protect these sites as funding becomes available.</p>	<p>1. No Progress 2. N/A</p>	<p>1. Discontinue 2. N/A 3. This capability is leveraged on an as-needed basis when considering grant funding.</p>
Hillburn-9	Village Warning System	All Hazards	Rockland County, Village	<p>Need to work with various agencies, associations, and general public to implement monitoring and warning systems in the Village.</p> <p>Review existing emergency response plans for enhancement opportunities: work with social support agencies, homeowners' associations and general public to develop and implement monitoring and warning systems focused on vulnerable populations and provision of adequate shelter facilities.</p>	<p>1. No Progress 2. N/A</p>	<p>1. Discontinue 2. Consolidate with old action (Hillburn-2) into single action (2024-HillburnV-01). 3. N/A</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
Hillburn-10	Public Awareness Program	All Hazards	Village	Need to keep public awareness programs up to date. Continue to develop and enhance the Village's public awareness program on hazards, prevention, and mitigation.	1. Ongoing Capability 2. N/A	1. Include 2. N/A 3. N/A
Hillburn-11	Certified Floodplain Manager	Flood	Village	Floodplain management and ordinance enforcement staff are not Certified Floodplain Managers. Require staff involved in floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs).	1. In Progress 2. N/A	1. Include 2. N/A 3. N/A
Hillburn-12	Critical Facilities Located in the Floodplain	Flood	Private Property Owners and Village support	The St. Lawrence Center and O&R Hillburn Substation are located in the floodplain. The St. Lawrence Center and O&R Hillburn Substation are located in the floodplain. The Village does not have jurisdiction over these facilities. The Village will work with the Town and County to notify the owners of their flood vulnerability identified during the Rockland County HMP update and NYS' requirement to protect to the 500-year flood or worst-case scenario.	1. In Progress 2. N/A	1. Include 2. N/A 3. N/A

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
Hillburn-13	Fourth Street Pump Flood Mitigation	Severe Storm, Flood	Village of Hillburn	<p>Fourth Street pump station is located in the floodplain and vulnerable to flooding.</p> <p>Protect the Fourth Street pump station by installing appropriate physical protective measures to mitigate flood future losses. The owner will determine the most cost-effective and feasible mitigation option on mitigating and assure that any mitigation addresses the 500-year flood event or "worst damage scenario". Mitigation options may include dry floodproofing, elevate infrastructure or relocate outside the floodplain.</p>	<p>1. No Progress 2. N/A</p>	<p>1. Include 2. N/A 3. N/A</p>

Proposed Hazard Mitigation Initiatives for the HMP Update

Hillburn participated in the mitigation strategy workshop for this HMP to identify appropriate actions to include in a local hazard mitigation strategy. Its comprehensive consideration of all possible activities to address hazards of concern included review of the following FEMA documents:

- FEMA 551 “Selecting Appropriate Mitigation Measures for Floodprone Structures” (March 2007)
- FEMA “Mitigation Ideas—A Resource for Reducing Risk to Natural Hazards” (January 2013).

The action worksheets included at the end of this annex list the mitigation actions that Hillburn would like to pursue in the future to reduce the effects of hazards. The actions are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in the Village’s priorities.

Table 9.8-18 indicates the range of proposed mitigation action categories. The four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table to further demonstrate the wide range of activities and mitigation measures selected.

Volume I identifies 14 evaluation criteria for prioritizing the mitigation actions. To assist with rating each mitigation action as high, medium, or low priority, a numeric rank is assigned (-1, 0, or 1) for each of the evaluation criteria. Table 2-19 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Table 9.8-18. Analysis of Mitigation Actions by Hazard and Category

Hazard	FEMA				CRS					
	LPR	SIP	NSP	EAP	PR	PP	PI	NR	SP	ES
Dam Failure	-	-	-	2	-	-	2	-	-	1
Disease Outbreak	-	-	-	2	-	-	2	-	-	1
Drought	-	-	-	2	-	-	2	-	-	1
Earthquake	-	-	-	2	-	-	2	-	-	1
Extreme Temperature	-	-	-	2	-	-	2	-	-	1
Flood	3	3	-	2	3	3	4	-	1	1
Landslide	-	-	-	2	-	-	2	-	-	1
Severe Weather	3	3	-	2	3	3	4	-	1	1
Severe Winter Weather	2	-	-	2	2	1	2	-	-	1
Wildfire	-	-	-	2	-	-	2	-	-	1

Local Plans and Regulations (LPR)—These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.

Structure and Infrastructure Project (SIP)—These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct structures to reduce the impact of hazards.

Natural Systems Protection (NSP)—These are actions that minimize damage and losses and preserve or restore the functions of natural systems.

Education and Awareness Programs (EAP)—These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities

Preventative Measures (PR)—Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.

Property Protection (PP)—These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.

Public Information (PI)—Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.

Natural Resource Protection (NR)—Actions that minimize hazard loss and preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.

Structural Flood Control Projects (SP)—Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.

Emergency Services (ES)—Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities

Table 9.8-19. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Other Community Objectives	Total	High / Medium / Low
2024-HillburnV-01	Automated Notification System	1	1	1	0	0	0	0	1	1	1	0	0	1	1	8	Medium
2024-HillburnV-02	Brook Street Culvert Upgrade	1	1	1	0	0	0	0	1	1	1	1	0	1	1	9	Medium
2024-HillburnV-03	Document Flood-prone Properties	1	1	1	0	1	1	0	1	1	1	0	0	1	0	9	Medium
2024-HillburnV-04	Flood-prone Roadway Mitigation Solutions	1	1	1	0	0	0	1	1	1	1	1	0	1	0	9	Medium
2024-HillburnV-05	Public Awareness and Outreach	1	1	1	0	1	1	0	1	1	1	0	1	1	1	12	High
2024-HillburnV-06	Certified Floodplain Manager Training	1	1	1	0	0	0	0	1	1	1	1	1	1	1	10	Medium
2024-HillburnV-07	Critical Facilities in the Floodplain	1	1	1	0	1	0	0	0	1	0	1	1	0	0	7	Medium
2024-HillburnV-07	Fourth Street Pump Station Improvements	1	1	1	0	1	0	0	0	1	0	1	0	1	0	7	Medium

Note: Volume I, Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14).

Action 2024-HillburnV-01. Automated Notification System

Action Name:	2024-HillburnV-01. Automated Notification System		
Description of the Problem:	The Village works with various agencies, associations, and the public to implement monitoring and warning systems, however, lacks an automated notification system for Village residents to increase awareness of hazard events and related impacts such as dam/levee failure, disease outbreak, droughts, earthquakes, extreme temperatures, floods, landslides, severe storms, severe winter storms, and wildfire		
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire	
Description of the Solution:	The Village will review existing emergency response plans for enhancement opportunities: work with social support agencies, homeowners associations and general public to develop and implement monitoring and warning systems focused on vulnerable populations and provision of adequate shelter facilities. The Village will also consider procuring an automated telephone notification system for Village residents.		
Lead Agency:	Village		
Supporting Agencies:	Rockland County Office of Emergency Services		
Estimated Cost:	Medium (\$10,000 to \$100,000)		
Potential Funding Sources:	State, Local		
Implementation Timeline:	Short-term (<5 years)		
Goals Met:	1, 2, 3, 4, 5, 6, 7		
Benefits:	High (> \$100,000)		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	This system could make it easier for populations with limited internet access or technical capabilities to become aware of potential hazard events or warnings.		
Impact on Critical Facilities/Lifelines:	This project could notify residents resources available to them and/or advise them to stay off roads during hazard events, reducing congestion for emergency vehicles.		
Impact on Capabilities	This project would improve the Village’s capabilities to prepare and respond to emergencies.		
Impact on Future Development:	N/A		
Climate Change Considerations:	Climate change is leading to an increase in frequency and intensity of precipitation events, which leads to an increase in flooding.		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low

Alternatives	Action	Evaluation
	No action	Current problem persists
	Automated email system	Not all residents have email or check it regularly

Action 2024-HillburnV-02. Brook Street Culvert Upgrade

Action Name:	2024-HillburnV-02. Brook Street Culvert Upgrade		
Description of the Problem:	The culvert on Brook Street is undersized and is leading to flooding from and influx of severe storms.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The Village will conduct a study to upgrade and replace the culvert to increase its capacity and reduce overflows.		
Lead Agency:	Village Engineer		
Supporting Agencies:	Highway/Public Works Department		
Estimated Cost:	High (> \$100,000)		
Potential Funding Sources:	State, Local, FEMA HMA, FMA, BRIC		
Implementation Timeline:	Short-term (<5 years)		
Goals Met:	1, 2, 4		
Benefits:	High (> \$100,000)		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	This project may reduce potential flood impacts in the surrounding roads and properties.		
Impact on Critical Facilities/Lifelines:	This project could help ensure roadways remain clear or at least passable during flood events.		
Impact on Capabilities	This project will mitigate the Village’s need to respond if Brook Street closes during a hazard event.		
Impact on Future Development:	This project will reduce flood impacts to future development in the surrounding area.		
Climate Change Considerations:	This project may increase the culvert’s capacity to withstand more intense precipitation events.		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low

Alternatives	Action	Evaluation
	No action	Current problem persists
	Remove culvert	Not feasible
	Relocate Brook Street	Not cost-effective

Action 2024-HillburnV-03. Document Flood-prone Properties

Action Name:	2024-HillburnV-03. Document Flood-prone Properties	
Description of the Problem:	There are properties in the Village that experience repetitive flood damage from severe storm events. Flood-vulnerable properties place an undue stress on the property owner and the Village.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Village will work with owners located in and around the floodplain to explore mitigation opportunities for repetitively flooded properties, and if appropriate and feasible, carry out acquisition, relocation, elevation, and flood proofing measures to protect these properties.	
Lead Agency:	Village Engineer, Private Property Owners	
Supporting Agencies:	Village of Hillburn, Building Department	
Estimated Cost:	Low (< \$10,000)	
Potential Funding Sources:	FEMA (HMGP, FMA, PDM), CDBG, NYS DHSES, Municipal Budget	
Implementation Timeline:	Short-term (<5 years)	
Goals Met:	1, 2, 3, 5	
Benefits:	This action will reduce the amount of flood prone properties and will increase outreach amongst the Village.	
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	This project could make it easier for the County and Village to reach homeowners with vulnerable properties.	
Impact on Critical Facilities/Lifelines:	N/A	
Impact on Capabilities	Data will help village and county design future mitigation actions and outreach to vulnerable residents.	
Impact on Future Development:	This project could help reduce potential impact of flooding on nearby future development.	

Climate Change Considerations:	This project could help identify potential areas or properties for potential buyouts or floodplain restoration projects.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem persists
	Identify repetitive loss areas		Not action-driven and does not reduce or eliminate vulnerability

Action 2024-HillburnV-04. Flood-prone Roadway Mitigation Solutions

Action Name:	2024-HillburnV-04. Flood-prone Roadway Mitigation Solutions	
Description of the Problem:	The Village has identified many roadways, specifically County owned roads, that repeatedly flood due to an increase in precipitation from severe storms and severe winter storms.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Village will develop specific mitigation solutions for flood-prone road systems (roads, bridges, intersections, drainage, etc.) under the leadership of County DPW.	
Lead Agency:	Village Mayor, Village Engineer	
Supporting Agencies:	Highway/Public Works Department, County Department of Public Works	
Estimated Cost:	Low (< \$10,000)	
Potential Funding Sources:	Local, State	
Implementation Timeline:	Short-term (< 5 years)	
Goals Met:	1, 2, 5, 7	
Benefits:	This action allows for a reduction in flood events in the Village	
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	N/A	
Impact on Critical Facilities/Lifelines:	This project aims to ensure the accessibility of roadways during flooding events and ensures access to emergency routes and critical facilities.	
Impact on Capabilities	This action strengthens the Village’s capability to work with the County and improve roadways.	
Impact on Future Development:	This project can help mitigate potential damage along any affected roadways.	

Climate Change Considerations:	Climate change is leading to an increase in frequency and intensity of precipitation events, which leads to an increase in flooding.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem persists
	Raise or relocate roadways		Not action-driven and does not reduce or eliminate vulnerability

Action 2024-HillburnV-05. Public Awareness and Outreach

Action Name:	2024-HillburnV-05. Public Awareness and Outreach		
Description of the Problem:	Village residents are not aware of hazards that they are exposed to and what can be done to further protect themselves and their properties from damages. The hazards that the Village is at risk for include dam/levee failure, disease outbreak, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, and wildfire.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire	
Description of the Solution:	The Village will improve public awareness on hazards, prevention, and mitigation through increased outreach, including but not limited to periodic discussion of hazard mitigation and the mitigation plan at other regular local meetings; use of annual flyers, newsletters, advertisements, or radio/TV announcements, etc.; and incorporating as much free information as possible from the FEMA publications warehouse and other appropriate sources on the Village website.		
Lead Agency:	Village Mayor		
Supporting Agencies:	Rockland County Office of Emergency Services		
Estimated Cost:	Low (< \$10,000)		
Potential Funding Sources:	Operating Budget		
Implementation Timeline:	Short-term (< 5 years)		
Goals Met:	3		
Benefits:	This action aims to educate Village residents.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	This initiative aims to reach populations that are low-income, do not speak English, and have limited internet access or technical capabilities.		

Impact on Critical Facilities/Lifelines:	N/A		
Impact on Capabilities	This action strengthens the Village education and outreach capabilities.		
Impact on Future Development:	N/A		
Climate Change Considerations:	Climate change is leading to an increase in frequency and intensity of precipitation events.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem persists
	Update website without linking to other resources		Would not reach those with limited internet or technology; not preferred

Action 2024-HillburnV-06. Certified Floodplain Manager Training

Action Name:	2024-HillburnV-06. Certified Floodplain Manager Training		
Description of the Problem:	The Village’s floodplain management and ordinance enforcement staff are not Certified Floodplain Managers and flooding is becoming more common and frequent from severe storms and severe winter storms.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The Village will require staff involved in floodplain management and ordinance enforcement to become Certified Floodplain Managers. The Village will add/train sufficient members of their staff to adequately enforce NFIP regulations/floodplain management ordinances		
Lead Agency:	Village		
Supporting Agencies:	Building Department		
Estimated Cost:	Low (< \$10,000)		
Potential Funding Sources:	Operating Budget		
Implementation Timeline:	Short-term (< 5 years)		
Goals Met:	1, 2, 3, 7		
Benefits:	This action strengthens the Village’s ability to enforce floodplain management practices.		
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	

Impact on Socially Vulnerable Populations:	N/A		
Impact on Critical Facilities/Lifelines:	This action will familiarize the Village staff with updated floodplain management practices which may benefit critical facilities and infrastructure that could be impacted by flooding.		
Impact on Capabilities	This action will provide the Village with stronger capabilities to enforce and update its floodplain management regulations.		
Impact on Future Development:	N/A		
Climate Change Considerations:	Climate change is leading to an increase in frequency and intensity of precipitation events, which leads to an increase in flooding.		
Priority: Check one	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem persists
	Have staff attend courses, but not become CFMs		Lack of recognition or continuing education requirements to ensure the Village's floodplain management follows best practices

Action 2024-HillburnV-07. Critical Facilities in the Floodplain

Action Name:	2024-HillburnV-07. Critical Facilities in the Floodplain		
Description of the Problem:	There are multiple critical facilities in the floodplain in the Village that are impacted by floods and severe storms, including the St. Lawrence Center, O&R Hillburn Substation, Hillburn Dam and a cellular tower owned by Verizon. The Village has jurisdiction over the Hillburn Dam, but the rest of these facilities are privately owned.		
Hazard(s) of Concern: Check all that apply	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The Village will notify the private owners regarding these critical facilities' flood vulnerability identified during the Rockland County HMP update and NYS' requirement to protect to the 500-year flood or worst-case scenario. The Village will provide the owners information regarding grant options for funding to implement their mitigation. Potential feasible projects may include the following. The private owners will need to determine the most cost effective and feasible mitigation action for these facilities. The Village evaluate the potential impacts to municipal-owner assets to determine if additional mitigation initiatives are required to protect property and life.		
Lead Agency:	Village Mayor, Property Owners		
Supporting Agencies:	Village Engineer, Building Department		
Estimated Cost:	Low (< \$10,000)		
Potential Funding Sources:	FEMA HMA, FMA, BRIC. Municipal operating budget		
Implementation Timeline:	Short-term (< 5 years)		

Goals Met:	1, 2, 4, 6		
Benefits:	The Village will experience less flooding at critical facilities.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR)	<input type="checkbox"/> Natural Systems Protection (NSP)	
	<input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR)	<input type="checkbox"/> Natural Resource Protection (NR)	
	<input checked="" type="checkbox"/> Property Protection (PP)	<input type="checkbox"/> Structural Flood Control Projects (SP)	
	<input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	N/A		
Impact on Critical Facilities/Lifelines:	This project aims to ensure the functionality of critical infrastructure during hazard events.		
Impact on Capabilities	This action strengthens the Village’s capabilities in protecting critical infrastructure		
Impact on Future Development:	This project may reduce impacts to future development in the surrounding area if activities are undertaken that ensure the facility’s operability during a hazard event.		
Climate Change Considerations:	Climate change is leading to an increase in frequency and intensity of precipitation events, which leads to an increase in flooding.		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem persists

Action 2024-HillburnV-08. Fourth Street Pump Station Improvements

Action Name:	2024-HillburnV-08. Fourth Street Pump Station Improvements		
Description of the Problem:	The Fourth Street pump station is located in the floodplain and is vulnerable to flooding from severe storm events..		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure	<input checked="" type="checkbox"/> Flood	
	<input type="checkbox"/> Disease Outbreak	<input type="checkbox"/> Landslide	
	<input type="checkbox"/> Drought	<input checked="" type="checkbox"/> Severe Storm	
	<input type="checkbox"/> Earthquake	<input type="checkbox"/> Severe Winter Storm	
	<input type="checkbox"/> Extreme Temperature	<input type="checkbox"/> Wildfire	
Description of the Solution:	The Village will protect the Fourth Street pump station by installing appropriate physical protective measures to mitigate flood future losses. The owner will determine the most cost-effective and feasible mitigation option on mitigating and assure that any mitigation addresses the 500-year flood event or "worst damage scenario". Mitigation options may include dry floodproofing, elevate infrastructure or relocate outside the floodplain.		
Lead Agency:	Village Engineer, Public Works/Highway Department		
Supporting Agencies:	Village Board		
Estimated Cost:	Low (< \$10,000)		
Potential Funding Sources:	FEMA HMA, FMA, BRIC. Municipal operating budget		
Implementation Timeline:	Short-term (< 5 years)		
Goals Met:	1, 2, 4, 6		
Benefits:	The pump station will be better protected by flood waters.		

Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	N/A	
Impact on Critical Facilities/Lifelines:	This project aims to ensure the functionality of critical infrastructure during hazard events.	
Impact on Capabilities	This action improves the Village’s capability to protect critical facilities.	
Impact on Future Development:	This project may reduce impacts to future development in the surrounding area if activities are undertaken that ensure the facility’s operability during a hazard event.	
Climate Change Considerations:	Climate change is leading to an increase in frequency and intensity of precipitation events, which leads to an increase in flooding.	
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No action	Current problem persists
	Relocate pump station	No feasible
	Dry floodproofing	Not preferred
	Elevate structure	Structure remains in floodplain

SECTION 9. JURISDICTIONAL ANNEXES

9.9 VILLAGE OF KASER

This jurisdictional annex to the Rockland County Hazard Mitigation Plan (HMP) provides information to assist public and private sectors in the Village of Kaser with reducing losses from future hazard events. This annex is not guidance of what to do when a disaster occurs; its focus is on actions that can be implemented prior to a disaster to reduce or eliminate damage to property and people. The annex presents a general overview of the Village of Kaser, describes who participated in the planning process, assesses the Village’s risk, vulnerability, and capabilities, and outlines a strategy for achieving a more resilient community.

9.9.1 Hazard Mitigation Planning Team

The Village of Kaser identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Village departments. The Deputy Clerk represented the community on the Rockland County HMP Planning Partnership and Steering Committee and supported the local planning process requirements by securing input from persons with specific knowledge to enhance the plan. All departments were asked to contribute to the annex development through reviewing and contributing to the capability assessment, reporting on the status of previously identified actions, and participating in action identification and prioritization.

Table 9.9-1 summarizes Village officials who participated in the development of the annex and in what capacity. Additional documentation of the Village’s planning activities through Planning Partnership meetings is included in Volume I.

Table 9.9-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Binyomin Mermelstein, Deputy Clerk Address: 15 Elyon Road, Monsey NY 10952 Phone Number: 845-352-2932 Email: kaser@ksrnet.com	Name/Title: Allie Pinkasovits, Clerk/Treasurer Address: 15 Elyon Road, Monsey NY 10952 Phone Number: 845-352-2932 Email: kaser@ksrnet.com
National Flood Insurance Program Floodplain Administrator	
Name/Title: Bernard Rosenfeld Address: 15 Elyon Road, Monsey, NY 10952 Phone Number: 845-352-2932 Email: kaser@ksnet.com	
Additional Contributors	
Name/Title: Eve Mancuso, Village Engineer, Brooker Engineering, a Weston & Sampson Company Method of Participation: Attended Risk Assessment and Mitigation Actions workshops, completed worksheets and surveys, updated actions through the BATool.	
Name/Title: Andy Stewart, Village Administrator Method of Participation: Attended Risk Assessment and Mitigation Actions workshops, completed worksheets and surveys, updated actions through the BATool.	

9.9.2 Municipal Profile

The Village of Kaser is located in the Town of Ramapo in Rockland County. It is completely surrounded by the hamlet of Monsey. The Village is considered the most densely populated municipality in the State of New York, with the fifth most densely populated area in the United States. The Village has a total area of 0.2 square miles and provides both police and garbage pickup services for residents. According to the U.S. Census, the 2020 population for the Village of Kaser was 5,491, a 1.1 percent decrease from the 2010 Census.

Research has shown that some populations are at greater risk from hazard events because of decreased resources or physical abilities. These populations can be more susceptible to hazard events based on a number of factors including their physical and financial ability to react or respond during a hazard, and the location and construction quality of their housing. Data from the 2021 American Community Survey 5-Year Estimates indicates that 24.3 percent of the population is five years of age or younger, 3.2 percent is 65 years of age or older, 24.8 percent is non-English speaking, 21.8 percent is below the ALICE threshold, and 1.9 percent is considered disabled.

9.9.3 Jurisdictional Capability Assessment and Integration

The Village of Kaser performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Volume I describes the components included in the capability assessment and their significance for hazard mitigation planning. The jurisdictional assessment for this annex includes analyses of the following:

- Planning and regulatory capabilities
- Development and permitting capabilities
- Administrative and technical capabilities
- Fiscal capabilities
- Education and outreach capabilities
- Classification under various community mitigation programs
- Adaptive capacity to withstand hazard events

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into day-to-day local government operations. As part of the hazard mitigation analysis, planning and policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress toward plan integration. Development of an updated mitigation strategy provided an opportunity for the Village of Kaser to identify opportunities for integration of mitigation concepts that can be incorporated into municipal procedures.

Planning, Legal, and Regulatory Capability and Integration

Table 9.9-2 summarizes the regulatory tools that are available to Kaser.

Table 9.9-2. Planning, Legal, and Regulatory Capability and Integration

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Codes, Ordinances, & Regulations				
Building Code	Yes	NYS Building Code & Chapter 140, 176, 196	State, County and Local	Building Inspector
<p><i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The NYS Building Code is intended to establish provisions that adequately protect public health, safety and welfare through the minimum requirements for building systems using prescriptive and performance-related provisions. It is founded on broad-based principles that make possible the use of new materials and new building designs. The 2020 edition is an update to the 2018 edition published by the ICC. It is part of the Uniform Fire Prevention and Building Code.</p>				
Zoning/Land Use Code	Yes	LL # 2 of 2008 and LL# 1 of 2014	Federal, State, Local	Building Inspector
<p><i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Zoning Ordinance implements the goals and objectives of the Comprehensive Plan.</p>				
Subdivision Code	No	-	-	-
<p><i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A</p>				
Site Plan Code	No	-	-	-
<p><i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A</p>				
Stormwater Management Code	Yes	Chapter 345, Sewers	Local	Rockland County
<p><i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The general purpose of this chapter is to provide for efficient, economic, environmentally safe, and legal operation of the Rockland County Sewer District's publicly owned treatment works (POTW). This chapter shall apply to all users of the POTW. It authorizes the issuance of wastewater discharge permits; provides for monitoring, compliance, and enforcement activities; establishes administrative review procedures; requires user reporting; and provides for the setting of fees for the equitable distribution of costs resulting from the programs established herein.</p>				
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
<p><i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A</p>				
Real Estate Disclosure	Yes	New York State (NYS) mandate, Property Condition Disclosure Act, NY Code – Article 14 §460-467	State and Local	NYS Department of State
<p><i>How has or will this be integrated with the HMP and how does this reduce risk?</i> In addition to facing potential liability for failing to disclose under the exceptions to “caveat emptor,” a home seller must make certain disclosures under the law or pay a credit of \$500 to the buyer at closing. While the PCDA requires a seller to complete a standardized disclosure statement and deliver it to the buyer before the buyer signs the final purchase contract, in practice, most home sellers in New York opt not to complete the statement and instead pay the credit.</p>				
Growth Management	No	-	-	-
<p><i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A</p>				
Environmental Protection Ordinance(s)	No	-	-	-
<p><i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A</p>				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Flood Damage Prevention Ordinance	Yes	Local Law No. 2 of 2008, amended to Local Law No. 1 of 2014	Federal, State, Local	Building Inspector
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The FDPO promotes the public health, safety and general welfare and to minimize public and private losses due to flood conditions in specific areas.				
Wellhead Protection	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Emergency Management Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Climate Change Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Other: Freeboard	Yes	State mandated BFE+2 for single and two-family residential construction, BFE+1 for all other construction types	State and Local	Building Inspector
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
A freeboard of two feet shall be added where the design flood elevation or other elevation requirements are specified. A freeboard shall not be required where it is not possible to obtain a design flood elevation from the FIRM or from any method established above and the design flood elevation is three feet above the highest adjacent grade.				
Other	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Planning Documents				
General/Comprehensive Plan	Yes	Rockland County Comprehensive Plan, March 2011	Local/County	Rockland County
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The Village utilizes the county comprehensive plan to guide future actions and development in the community.				
Capital Improvement Plan	Yes	Capital Improvement Plan	Local	Citizen Advisory Committee
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The Village's CIP helps guide financial decision on which large-scale projects to implement within the community, and what actions to prioritize in terms of hazard mitigation.				
Disaster Debris Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Floodplain Management or Watershed Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Stormwater Management Plan	Yes	Stormwater Management Plan	Local	Engineering
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The Stormwater Management Plan regulates and maintains critical stormwater infrastructure located in the Village, such as culverts, drainage basins, ditches, and more.				
Open Space Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Urban Water Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Habitat Conservation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Economic Development Plan	Yes	Economic Development Plan	Local	Citizen Advisory Committee
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The purpose of this plan is to promote sustainable economic development within the Village.				
Community Wildfire Protection Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Community Forest Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Transportation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Agriculture Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Climate Action/ Resiliency/Sustainability Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Tourism Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Business/ Downtown Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Other (for example NYRCR, etc.)	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Response/Recovery Planning				
Comprehensive Emergency Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Continuity of Operations Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Substantial Damage Response Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Threat & Hazard Identification & Risk Assessment	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Post-Disaster Recovery Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Public Health Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

Development and Permitting Capability

Table 9.9-3 summarizes the capabilities of Kaser to oversee and track development.

Table 9.9-3. Development and Permitting Capability

Indicate if your jurisdiction implements the following	Yes/No	Comment:
Do you issue development permits? <ul style="list-style-type: none"> If you issue development permits, what department is responsible? If you do not issue development permits, what is your process for tracking new development? 	Yes	The Building Department is responsible for issuing development permits.
Are permits tracked by hazard area? (For example, floodplain development permits.)	No	-
Do you have a buildable land inventory? <ul style="list-style-type: none"> If you have a buildable land inventory, please describe 	No	-
Describe the level of build-out in your jurisdiction.	N/A	-

Administrative and Technical Capability

Table 9.9-4 summarizes potential staff and personnel resources available to Kaser and their current responsibilities that contribute to hazard mitigation.

Table 9.9-4. Administrative and Technical Capabilities

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
<i>Administrative Capability</i>		
Planning Board	Yes	The Village Board also serves as the Planning Board that reviews all site plans, evaluates open space, and addresses environmental issues including if locations are in the floodplain. Zoning and building issues are discussed at public Planning Board meetings.
Zoning Board of Adjustment	No	-
Planning Department	No	-
Mitigation Planning Committee	No	-
Environmental Board/Commission	No	-
Open Space Board/Committee	No	-
Economic Development Commission/Committee	No	-
Public Works/Highway Department	Yes	The Village has a contract with the Town of Ramapo for Department of Public Works (DPW); however, the Village also has one staff to assist as well. During and after every rain event, the Village DPW staff inspects all catch basins and after the event cleans the catch basins as needed. The Village DPW staff also clean the streams after each storm event. The Village Deputy Clerk also inspects for areas of flooding during and after rain/storm events and documents. The Village has a small truck with tools to enable Village DPW to address fallen trees/limbs to clear roads and access ways.
Construction/Building/Code Enforcement Department	No	-
Emergency Management/Public Safety Department	No	-
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	Yes	Storm-drain cleaning before/during rain events; stream cleaning; Snow and tree removal as capable.
Mutual aid agreements	Yes	Town of Ramapo (Police and DPW)
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	No	-
Other	-	-
<i>Technical/Staffing Capability</i>		
Planners or engineers with knowledge of land development and land management practices	Yes	Planner, Building Inspector
Engineers or professionals trained in building or infrastructure construction practices	Yes	Brooker Engineering
Planners or engineers with an understanding of natural hazards	Yes	Village Planner
Staff with expertise or training in benefit/cost analysis	Yes	Contractor engineer

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
Professionals trained in conducting damage assessments	No	-
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	No	Use County web portal
Environmental scientist familiar with natural hazards	Yes	Village staff
Surveyor(s)	Yes	Contract engineer as needed.
Emergency Manager	Yes	Police – utilizes Town Monsey Fire District Village has its own Public Safety – manage events and through the weekends and holidays. Village has many volunteers that assist as well.
Grant writer(s)	Yes	Village Deputy Clerk or hire contractors as needed.
Resilience Officer	No	-
Other (this could include stormwater engineer, environmental specialist, etc.)	-	-

Fiscal Capability

Table 9.9-5 summarizes financial resources available to Kaser.

Table 9.9-5. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use? (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	Yes
Capital improvements project funding	Municipal budget, but it is limited
Authority to levy taxes for specific purposes	Yes
User fees for water, sewer, gas or electric service	No
Impact fees for homebuyers or developers of new development/homes	No
Stormwater utility fee	No
Incur debt through general obligation bonds	No
Incur debt through special tax bonds	No
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	No
Other federal or state Funding Programs	Yes (U.S. HUD CDBG, FEMA HMGP, NYS DOT Transportation Alternative Program)
Open Space Acquisition funding programs	No
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	No

Education and Outreach Capability

Table 9.9-6 summarizes the education and outreach resources available to Kaser.

Table 9.9-6. Education and Outreach Capabilities

Outreach Resources	Available? (Yes/No)	Comment:
Public information officer or communications office	No	-
Personnel skilled or trained in website development	No	-
Hazard mitigation information available on your website	No	-
Social media for hazard mitigation education and outreach	No	-
Citizen boards or commissions that address issues related to hazard mitigation	Yes	The Citizens Advisory Committee that develops a project list providing residents an opportunity for input, and the committee votes. This is done for CDBG grant programs.
Warning systems for hazard events	Yes	The County utilizes NY-Alert and CodeRed (the backup to NY-Alert) for emergency notifications (all Towns and Villages have access to it).
Natural disaster/safety programs in place for schools	No	-
Organizations that conduct outreach to socially vulnerable populations and underserved populations		-
Public outreach mechanisms / programs to inform citizens on natural hazards, risk, and ways to protect themselves during such events	Yes	See below
If yes, please describe.	-	The Village prepares and distributes pamphlets, develops an annual newsletter, and can make mass telephone calls and send emails to those who signed up on the list and provide residents information regarding upcoming storm events, preparedness, or parking during the winter months. The Village ensures messages distributed from the Town and County is also passed on to residents through the telephone call or email system.

Community Classifications

Table 9.9-7 summarizes classifications for community programs available to Kaser.

Table 9.9-7. Community Classifications

Program	Participating? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	No	-	-
New York State Department of Environmental Conservation (NYSDEC) Climate Smart Community	No	-	-
National Weather Service Storm Ready Certification	No	-	-
Firewise Communities classification	No	-	-
Other: Organizations with mitigation focus (advocacy group, non-government)	Yes	-	-

N/A = N/A

— = Unavailable

Adaptive Capacity

Adaptive capacity is defined as “the ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or respond to consequences” (IPCC, 2022). Each jurisdiction has a unique combination of capabilities to adjust to, protect from, and withstand a future hazard event, future conditions, and changing risk. Table 9.9-8 summarizes the adaptive capacity for each identified hazard of concern and the Village’s capability to address related actions using the following classifications:

- Strong: Capacity exists and is in use.
- Moderate: Capacity might exist; but is not used or could use some improvement.
- Weak: Capacity does not exist or could use substantial improvement.

Table 9.9-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Disease Outbreak	Moderate
Drought	Moderate
Earthquake	Moderate
Extreme Temperature	Moderate
Flood	Moderate
Landslide	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

9.9.4 National Flood Insurance Program Compliance

This section provides specific information on the management and regulation of the regulatory floodplain, including current and future compliance with the National Flood Insurance Program (NFIP). The floodplain administrator listed in Table 9.9-1 is responsible for maintaining this information.

NFIP Summary

Table 9.9-9 summarizes the NFIP statistics for Kaser.

Table 9.9-9. Village of Kaser NFIP Summary of Policy and Claim Statistics

# Policies	2
# Claims (Losses)	0
Total Loss Payments	\$0
# Repetitive Loss Properties (NFIP definition)	0
# Repetitive Loss Properties (FMA definition)	0
# Severe Repetitive Loss Properties	0
# Policies Within the 1 percent Annual Chance Flood Boundary	0

NFIP Definition of Repetitive Loss: The NFIP defines a repetitive loss property as any insurable building for which two or more claims of more than \$1,000 were paid by the NFIP within any rolling 10-year period since 1978.

FMA Definition of Repetitive Loss: FEMA’s Flood Mitigation Assistance (FMA) program defines a repetitive loss property as any insurable building that has incurred flood-related damage on two occasions, in which the cost of the repair, on average, equaled or exceeded 25 percent of the market value of the structure at the time of each such flood event.

Definition of Severe Repetitive Loss: A residential property covered under an NFIP flood insurance policy and: (a) That has at least four NFIP claim payments over \$5,000 each, and the cumulative amount of such claims payments exceeds \$20,000; or (b) For which at least two separate claims payments have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building. At least two of the claims must have occurred within any 10-year period, more than 10 days apart.

Source: FEMA, December 2023

Note: RL count may include properties also identified as SRL.

Flood Vulnerability Summary

Table 9.9-10 provides a summary of the NFIP program in Kaser.

Table 9.9-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	The Village of Kaser experiences flooding during severe storm events, especially in low-lying areas of the Village.
Do you maintain a list of properties that have been damaged by flooding?	No, not at this time.
Do you maintain a list of property owners interested in flood mitigation?	No, not at this time.
How many homeowners and/or business owners are interested in mitigation (elevation or acquisition)?	Unknown, at this time.
Are any riskmap projects currently underway in your jurisdiction?	No, not at this time.
How do you make Substantial Damage determinations?	If needed, Building Department would perform an onsite inspection.
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	Unknown, at this time.
How many properties have been mitigated (elevation or acquisition) in your jurisdiction?	Unknown, at this time.

NFIP Topic	Comments
Do your flood hazard maps adequately address the flood risk within your jurisdiction? <ul style="list-style-type: none"> If not, state why. 	Yes.
NFIP Compliance	
What local department is responsible for floodplain management?	The floodplain administrator is responsible for floodplain management within the Village.
Are any certified floodplain managers on staff in your jurisdiction?	No.
Do you have access to resources to determine possible future flooding conditions from climate change?	Yes.
Does your floodplain management staff need any assistance or training to support its floodplain management program? <ul style="list-style-type: none"> If so, what type of assistance/training is needed? 	No, not at this time.
Provide an explanation of NFIP administration services you provide (e.g., permit review, GIS, education/outreach, inspections, engineering capability)	N/A
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	During Review, calculations of increase in volume and SF determined.
What are the barriers to running an effective NFIP program in the community, if any?	N/A
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? <ul style="list-style-type: none"> If so, state the violations. 	N/A
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	Based on NYS DEC data, the Village has never had a CAV/CAC.
What is the local law number or municipal code of your flood damage prevention ordinance?	LL #2
What is the date that your flood damage prevention ordinance was last amended?	2014
Does your floodplain management program meet or exceed minimum requirements? <ul style="list-style-type: none"> If exceeds, in what ways? 	The program meets minimum requirements.
Are there other local ordinances, plans or programs (e.g., site plan review) that support floodplain management and meeting the NFIP requirements? For instance, does the planning board or zoning board consider efforts to reduce flood risk when reviewing variances such as height restrictions?	No, not at this time.
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	The Village would like to explore the opportunity to join the CRS program.

9.9.5 Growth/Development Trends

Understanding how past, current, and projected development patterns have or are likely to increase or decrease risk in hazard areas is a key component to appreciating a jurisdiction’s overall risk to its hazards of concern. Recent and expected future development trends, including major residential/commercial development and major infrastructure development, are summarized in Table 9.9-11 through Table 9.9-13.

Table 9.9-11. Number of Building Permits for New Construction Issued Since the Previous HMP

	New Construction Permits Issued			Total
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	
2019				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2020				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2021				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2022				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2023				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0

SFHA = Special Flood Hazard Area (1 percent flood event)

Table 9.9-12. Recent Major Development and Infrastructure from 2018 to Present

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
No major development and infrastructure reported.					

* Only location-specific hazard zones or vulnerabilities identified.

Table 9.9-13. Known or Anticipated Major Development and Infrastructure in the Next Five Years

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
No major development or infrastructure anticipated.					

* Only location-specific hazard zones or vulnerabilities identified.

9.9.6 Jurisdictional Risk Assessment

The hazard profiles in Volume I provide detailed information regarding each planning partner’s vulnerability to the identified hazards, including summaries of the Village of Kaser risk assessment results and data used to determine the hazard ranking. Key local risk assessment information is presented below.

Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Village are shown in Figure 9.9-1 through Figure 9.9-2. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps are provided only for hazards that can be identified clearly using mapping techniques and technologies and for which Kaser has significant exposure. The maps show the location of potential new development, where available.

Figure 9.9-1. Village of Kaser Flood and Dam Inundation Hazard Area Extent and Location

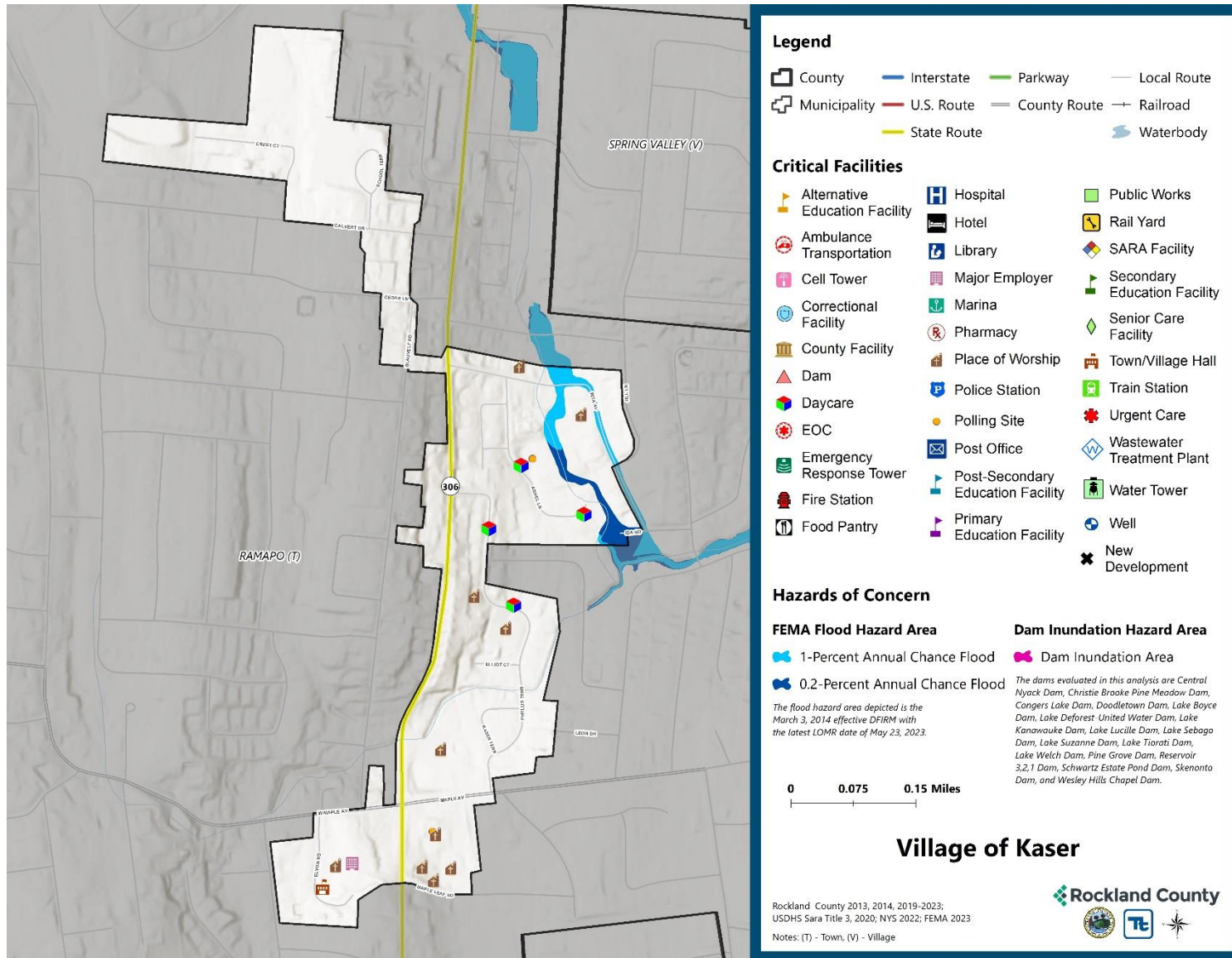
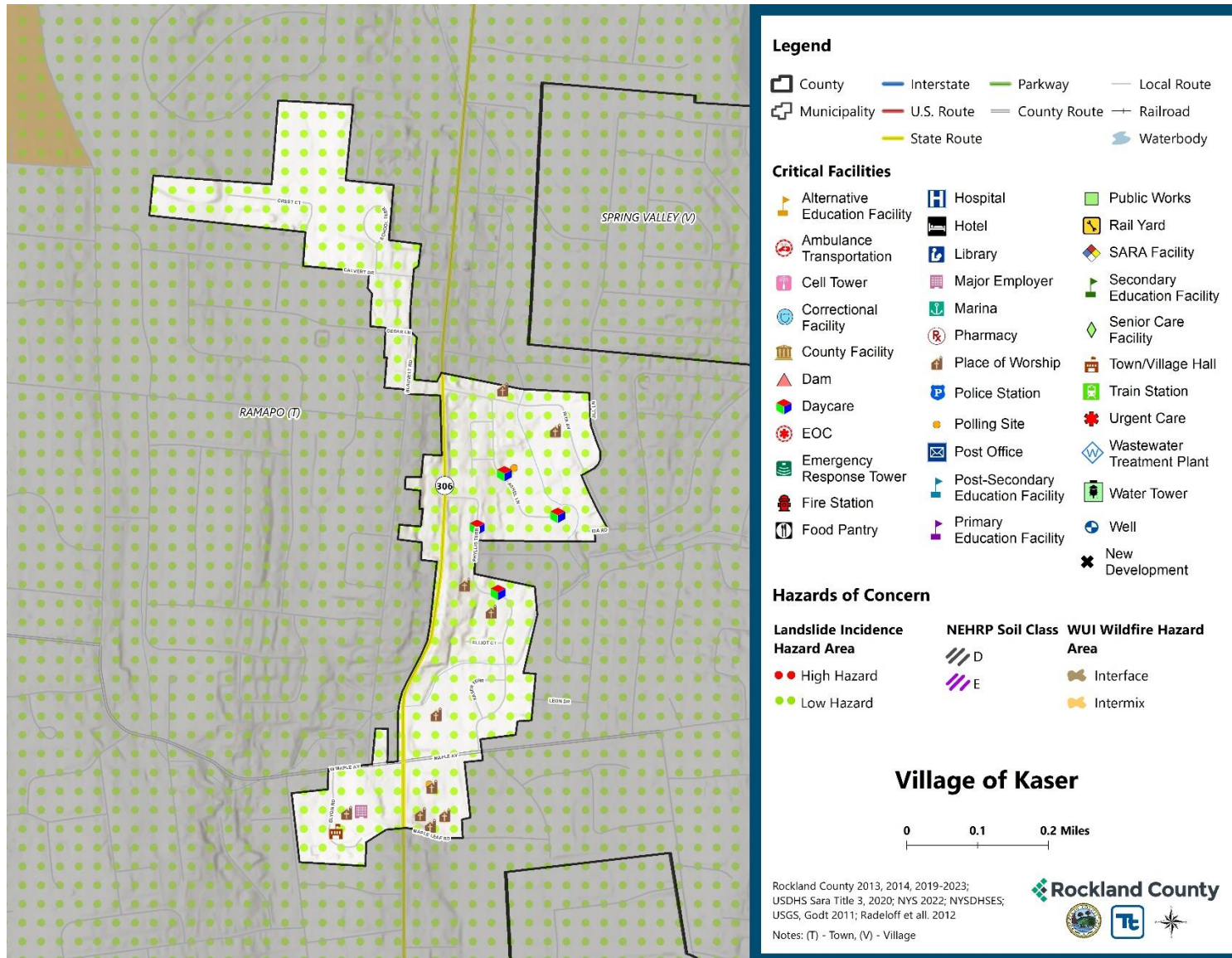


Figure 9.9-2. Village of Kaser Landslide, Earthquake, and Wildfire Hazard Area Extent and Location



Hazard Event History

The history of natural and non-natural hazard events in the Village of Kaser is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 9.9-14 provides details on loss and damage in the Village during hazard events since the last hazard mitigation plan update.

Table 9.9-14. Hazard Event History in the Village of Kaser

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Summary of Damage and Losses in the Village
Jan 20, 2020 - May 11, 2023	New York Covid-19 (3434-EM-NY, 4480-DR-NY)	Yes	The Covid-19 pandemic resulted in nationwide shutdowns, social distancing and masking requirements, and immunization efforts. Since the start of the pandemic, roughly 950 deaths have been reported in Rockland County. The federal Public Health Emergency expired in May 2023 but illness continues to occur as the virus shifts to becoming endemic.	The Village followed mandated social distancing and business/public closures which impacted the economy and health of the community.
August 4, 2020	New York Tropical Storm Isaias (4567-DR-NY)	Yes	The center of Isaias passed about 65 miles west of New York City at 3 pm on August 4, 2020. Tropical storm force winds extended well east of the center of circulation. In addition, 1 to 3 inches of rainfall, highest west, were recorded across the county. These types of winds and rainfall across the area resulted in numerous trees and tree limbs being downed, power outages, damages to homes and automobiles, and disruption to transit.	No recorded major losses for the Village for Isaias.
August 21-24, 2021	New York Hurricane Henri (3565-EM-NY)	Yes	Rainfall from Tropical Storm Henri resulted in widespread flash flooding across southeastern New York, particularly portions of the Lower Hudson Valley. Rainfall totals generally ranged from 2-5 inches, with this rain coming in addition to the 2-5 inches that fell during the predecessor rainfall event the night before.	No recorded major losses for the Village for Henri.

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Summary of Damage and Losses in the Village
September 1-3, 2021	New York Remnants of Hurricane Ida (3572-EM-NY, 4615-DR-NY)	Yes	Extremely heavy rainfall associated with the remnants of Hurricane Ida overspread southeast New York during the evening of September 1 and continued through the early morning hours of September 2. Rainfall totals ranged from 5-8 inches across much of the region, with much of that rain falling in just a few hours. This resulted in widespread catastrophic flash flooding.	No recorded major losses for the Village for Ida.

EM = Emergency Declaration (FEMA)
 FEMA = Federal Emergency Management Agency
 DR = Major Disaster Declaration (FEMA)
 N/A = N/A

Hazard Ranking and Vulnerabilities

The hazard profiles in Volume I have detailed information regarding each planning partner’s vulnerability to the identified hazards. The following summarizes presents key risk assessment results for the Village of Kaser.

Hazard Ranking

The participating jurisdictions have differing degrees of vulnerability to the hazards of concern, so each jurisdiction ranked its own degree of risk to each hazard. The community-specific hazard ranking is based on problems and impacts identified by the risk assessment presented in Volume I. The ranking process involves an assessment of the likelihood of occurrence for each hazard; the potential impacts of the hazard on people, property, and the economy; community capabilities to address the hazard; and changing future climate conditions. Kaser reviewed the County hazard ranking and individual results to assess the relative risk of the hazards of concern to the community. Table 9.9-15 shows Kaser’s final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 9.9-15. Hazard Ranking Input

Hazard	Rank
Dam Failure	Low
Disease Outbreak	Medium
Drought	Medium
Earthquake	Low
Extreme Temperature	Medium
Flood	Low
Landslide	Low
Severe Weather	High
Severe Winter Weather	High
Wildfire	Low

Note: The scale is based on the hazard rankings established in Volume I, modified as appropriate based on review by the jurisdiction

Critical Facilities

Table 9.9-16 identifies critical facilities in the community located in the 1 percent and 0.2 percent annual chance floodplains.

Table 9.9-16. Critical Facilities Flood Vulnerability

Name	Type	Exposure		Addressed by Proposed Action	Already Protected to 0.2 percent Flood Level (describe protections)
		1 percent Event	0.2 percent Event		
The Village of Kaser has no critical facilities located within the 1- or 0.2-percent Annual Chance Flood Hazard Area.					

The following high hazard dams are located in or could impact the Village of Kaser:

- First Reservoir Dam, located in Thiells on Horse Chock Brook.
- Lake Deforest Dam, located in West Nyack on the Hackensack River.
- Lake Welch Dam, located in Willow Grove on the Minisceongo Creek.
- Lake Sebago Dam, located in Sloatsburg on the Stony Brook Creek.
- Like Garnerville Dam, located in West Haverstraw on the Minisceongo Creek.
- Tivoli Lake Dam, located in Sloatsburg on the Tr-Ramapo River.
- Potake Lake Dam, located in Sloatsburg on the Tr-Ramapo River.
- Lake Kanawauke Dam, located in New Sebago Beach on the Stony Brook.
- Lake Suzanne Dam, located in Spring Valley on the Pascack Brook.
- Lake Lucille Dam, located in Lake Lucille on the Hackensack River.
- Central Nyack Dam, located in Central Nyack.
- Pine Grove Lake Dam, located in Sloatsburg on the Tr-Ramapo River.
- Congers Lake Dam, located in Congers on the E Branch Hack.

Identified Issues

After review of the Village of Kaser’s hazard event history, hazard rankings, hazard location, and current capabilities, the Village of Kaser identified the following vulnerabilities within their community:

There is a lack of backup power and emergency lighting in the Village for use during power outages and emergency hazard events. Critical facilities may be needed to open as shelters, PPE distribution centers, and as emergency operation centers. Dam/levee failure, disease outbreaks, droughts, earthquakes, extreme temperatures, flooding, landslides, severe storms, severe winter storms, and wildfire are all events where backup power may be needed. The Village has inadequate culverts on Rita Avenue and Phyllis Terrace which leads to flooding from severe storm events. The Village currently does not have proper snow and ice removal equipment to use during winter storm events which may inhibit emergency responders due to difficult travel conditions. The current emergency response plans do not implement monitoring or warning systems to notify residents of incoming hazards such as dam/levee failure, droughts, earthquakes, extreme temperatures,

flooding, landslides, severe storms, severe winter storms and wildfire. Floodplain management and ordinance enforcement staff are not Certified Floodplain Managers. The Village is currently not in the CRS program.

9.9.7 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and prioritizes actions to address over the next five years.

Past Mitigation Initiative Status

Table 9.9-17 indicates progress on the Village's mitigation strategy identified in the 2019 HMP. Actions that are still recommended but not completed or that are in progress are carried forward and combined with new actions as part of the mitigation strategy for this plan update. Previous actions that are now ongoing programs and capabilities are indicated as such and are presented in the capability assessment earlier in this annex.

Additional Mitigation Efforts

In addition to the mitigation initiatives completed in Table 9.9-17, Kaser identified the following mitigation efforts completed since the last HMP:

- The Village has identified undersized culverts in need of flood mitigation on Rita Avenue and Phyllis Terrace (near Pascack Brook).
- The Village is exploring CRS opportunities.

Since the adoption of the County's first HMP, Kaser has made significant mitigation progress in the following areas:

- Emergency Response Planning.
- Funding Opportunities
- Identification of Mitigation needs for Critical Infrastructure.

Table 9.9-17. Status of Previous Mitigation Actions

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
Kaser-1	Back-Up Power for Critical Facilities	All Hazards	Village Clerk	<p>Lack of backup power and emergency lighting in the Village for use during power outages and emergencies.</p> <p>Ensure continuity of operations and critical facilities and facilities housing vulnerable populations:</p> <ol style="list-style-type: none"> 1. Purchase a generator to supply backup power to the synagogue on Phyllis terrace. 2. Purchase additional diesel-fueled light towers which can also serve as mobile generators. 3. Purchase a mobile generator for Village Hall. 	<ol style="list-style-type: none"> 1. No Progress 2. A challenge has been funding availability. 	<ol style="list-style-type: none"> 1. Include 2. Ensure continuity of operations in the Village after a natural hazard event. The Village will: <ol style="list-style-type: none"> 1. Purchase a generator to supply backup power to the synagogue on Phyllis terrace. 2. Purchase additional diesel-fueled light towers which can also serve as mobile generators. 3. Purchase a mobile generator for Village Hall 3. N/A
Kaser-2	Increase Capacity of Culverts in Village	Flood, Severe Storm	Village Clerk	<p>Inadequate culverts on Rita Avenue and Phyllis Terrace leads to flooding.</p> <p>Increase the capacity of culverts on Rita Avenue and Phyllis Terrace (culverts through Village – Pascack Brook) to address flooding.</p>	<ol style="list-style-type: none"> 1. No Progress 2. A challenge has been staff availability. 	<ol style="list-style-type: none"> 1. Include 2. Increase the capacity of culverts on Rita Avenue and Phyllis Terrace (near Pascack Brook) to address flooding. 3. N/A

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
Kaser-3	Purchase Pick-Up Truck for Snow and Ice Removal	Severe Winter Storm	Village DPW	The Village currently does not have proper snow and ice removal equipment to use during winter storm events. Purchase a small pick-up truck to enable the Village to conduct snow/ice removal and distribute salt on roads during winter storm events.	1. No Progress 2. A challenge has been funding availability.	1. Include 2. Purchase a pick-up truck for the Village to conduct snow/ice removal and distribute salt on roads during winter storm events 3. N/A
Kaser-4	Review Emergency Response Plans	All Hazards	Village	The current emergency response plans do not implement monitoring or warning systems. Review existing emergency response plans for enhancement opportunities: work with social support agencies, homeowners' associations, and general public to develop and implement monitoring and warning systems focused on vulnerable populations and provision of adequate shelter facilities.	1. No Progress 2. A challenge has been staff availability and coordination.	1. Include 2. Review existing emergency response plans for enhancement opportunities: work with social support agencies, homeowners' associations and general public to develop and implement monitoring and warning systems focused on vulnerable populations and provision of adequate shelter facilities. 3. N/A
Kaser-5	Certified Floodplain Managers	Flood	Village Clerk, NFIP Floodplain Administrator	Floodplain management and ordinance enforcement staff are not Certified Floodplain Managers. Require staff involved in floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs).	1. No Progress 2. A challenge has been staff capabilities.	1. Include 2. Require staff involved in floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs). 3. N/A

Proposed Hazard Mitigation Initiatives for the HMP Update

Kaser participated in the mitigation strategy workshop for this HMP to identify appropriate actions to include in a local hazard mitigation strategy. Its comprehensive consideration of all possible activities to address hazards of concern included review of the following FEMA documents:

- FEMA 551 “Selecting Appropriate Mitigation Measures for Floodprone Structures” (March 2007)
- FEMA “Mitigation Ideas—A Resource for Reducing Risk to Natural Hazards” (January 2013).

The action worksheets included at the end of this annex list the mitigation actions that Kaser would like to pursue in the future to reduce the effects of hazards. The actions are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in the Village’s priorities.

Table 9.9-18 indicates the range of proposed mitigation action categories. The four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table to further demonstrate the wide range of activities and mitigation measures selected.

Volume I identifies 14 evaluation criteria for prioritizing the mitigation actions. To assist with rating each mitigation action as high, medium, or low priority, a numeric rank is assigned (-1, 0, or 1) for each of the evaluation criteria. Table 9.9-19 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Table 9.9-18. Analysis of Mitigation Actions by Hazard and Category

Hazard	Actions That Address the Hazard, by Action Category									
	FEMA				CRS					
	LPR	SIP	NSP	EAP	PR	PP	PI	NR	SP	ES
Dam Failure	1	1	-	-	-	1	-	-	-	1
Disease Outbreak	-	1	-	-	-	1	-	-	-	-
Drought	1	1	-	-	-	1	-	-	-	1
Earthquake	1	1	-	-	-	1	-	-	-	1
Extreme Temperature	1	1	-	-	-	1	-	-	-	1
Flood	2	2	-	1	1	1	1	-	1	1
Landslide	1	1	-	-	-	1	-	-	-	1
Severe Weather	1	2	-	-	-	1	-	-	1	1
Severe Winter Weather	1	1	-	1	-	1	-	-	-	2
Wildfire	1	1	-	-	-	1	-	-	-	1

Local Plans and Regulations (LPR)—These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.

Structure and Infrastructure Project (SIP)—These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct structures to reduce the impact of hazards.

Natural Systems Protection (NSP)—These are actions that minimize damage and losses and preserve or restore the functions of natural systems.

Education and Awareness Programs (EAP)—These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities

Preventative Measures (PR)—Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.

Property Protection (PP)—These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.

Public Information (PI)—Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.

Natural Resource Protection (NR)—Actions that minimize hazard loss and preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.

Structural Flood Control Projects (SP)—Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.

Emergency Services (ES)—Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities

Table 9.9-19. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Multi-Hazard	Climate Change	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
2024-KaserV-01	Back-Up Power for Critical Facilities	1	1	1	1	0	0	0	0	1	1	1	1	1	1	1	10	High
2024-KaserV-02	Increase Capacity of Culverts in Village	1	1	1	1	0	0	0	1	1	1	1	1	1	1	1	11	High
2024-KaserV-03	Purchase Pick-Up Truck for Snow and Ice Removal	1	1	1	0	0	0	1	0	1	1	1	1	1	1	1	10	High
2024-KaserV-04	Review Emergency Response Plans	1	1	1	0	1	1	0	0	1	1	1	1	1	1	1	11	High
2024-KaserV-05	Certified Floodplain Managers	1	1	1	0	1	1	0	0	1	1	1	1	1	1	1	11	High
2024-KaserV-06	Community Rating System	1	1	1	0	1	1	1	0	1	1	1	1	1	1	1	12	High

Note: Volume I, Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-4), Medium (5-8), High (9-14).

Action 2024-KaserV-01. Back-Up Power for Critical Facilities

Action Name:	2024-KaserV-01. Back-Up Power for Critical Facilities	
Description of the Problem:	There is a lack of backup power and emergency lighting in the Village for use during power outages and emergency hazard events. Critical facilities may be needed to open as shelters, PPE distribution centers, and as emergency operation centers. Dam/levee failure, disease outbreaks, droughts, earthquakes, extreme temperatures, flooding, landslides, severe storms, severe winter storms, and wildfire are all events where backup power may be needed.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	Ensure continuity of operations in the Village after a natural hazard event. The Village will: 1. Purchase a generator to supply backup power to the synagogue on Phyllis terrace. 2. Purchase additional diesel-fueled light towers which can also serve as mobile generators. 3. Purchase a mobile generator for Village Hall	
Lead Agency:	Village Clerk	
Supporting Agencies:	N/A	
Impact on Critical Facilities/Lifelines:	This action protects public health and safety and ensures continued operation of a critical facility and its essential functions during a power outage.	
Estimated Cost:	Medium (\$10,000 to \$100,000)	
Potential Funding Sources:	Grant funding where available	
Implementation Timeline:	Short Term (<5 yrs.)	
Goals Met:	1, 2, 3, 4, 5, 6, 7	
Benefits:	This action ensures that critical facilities can operate during emergency events.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Protection of critical facilities provides an opportunity for first responders, utility workers, and emergency managers to stage and deploy resources to vulnerable and hazard prone areas.	
Impact on Future Development:	This action results in protection of a critical facility that could support future development.	
Climate Change Considerations:	Climate change is likely to increase severe weather events such as flooding, wind, and extreme temperatures that result in power failures. This action accounts for a likely increase in power failure events.	
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High <input type="checkbox"/> Medium	<input type="checkbox"/> Low

Alternatives	Action	Evaluation
	No action.	Problem continues.
	Install solar panels.	Weather dependent.
	Install wind turbines.	Weather dependent, costly.

Action 2024-KaserV-02. Increase Capacity of Culverts in Village

Action Name:	2024-KaserV-02. Increase Capacity of Culverts in Village	
Description of the Problem:	The Village has inadequate culverts on Rita Avenue and Phyllis Terrace which leads to flooding from severe storm events.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	Increase the capacity of culverts on Rita Avenue and Phyllis Terrace (near Pascack Brook) to address flooding.	
Lead Agency:	Village Clerk	
Supporting Agencies:	N/A	
Impact on Critical Facilities/Lifelines:	Access to health and medical facilities will be maintained, both for healthcare workers and the population who requires treatment for injuries and illness.	
Estimated Cost:	High (> \$100,000)	
Potential Funding Sources:	BRIC, State CRRRA bond	
Implementation Timeline:	Long Term (5+ yrs.)	
Goals Met:	1, 2, 3, 5, 7	
Benefits:	Protection of life and property, infrastructure.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Areas that were previously vulnerable to frequency or severe flooding events will be less likely to be impacted by flooding events.	
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.	

Climate Change Considerations:	Increasing intensity, duration, and frequency of heavy rainfall events due to climate change. This action upsizes culvert sizes to meet changing stormwater needs as the result of climate change.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action.		Problem continues.
	Elevate roadway.		May not solve this particular flooding concern, Costly.
	Relocated roadway		Not possible.

Action 2024-KaserV-03. Purchase Pick-Up Truck for Snow and Ice Removal

Action Name:	2024-KaserV-03. Purchase Pick-Up Truck for Snow and Ice Removal		
Description of the Problem:	The Village currently does not have proper snow and ice removal equipment to use during winter storm events which may inhibit emergency responders due to difficult travel conditions.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	Purchase a pick-up truck for the Village to conduct snow/ice removal and distribute salt on roads during winter storm events		
Lead Agency:	Village DPW		
Supporting Agencies:	N/A		
Impact on Critical Facilities/Lifelines:	This action will ensure the functions of critical facilities can remain fully operational during a severe winter storm event.		
Estimated Cost:	Medium (\$10,000 to \$100,000)		
Potential Funding Sources:	Grant funding where available.		
Implementation Timeline:	Short Term (< 5yrs.)		
Goals Met:	1, 2, 3, 4, 5, 6, 7		
Benefits:	This action would make snow removal easier for the Village.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)	

CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)		<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	This action would ensure roadways are accessible and safe for vulnerable populations to use after a severe winter storm event. It would also allow for safe evacuation if needed.			
Impact on Future Development:	N/A			
Climate Change Considerations:	Climate change will exacerbate severe storm events and will cause increased severity and frequency of snowfall. This action would help to mitigate risks to the community from climate change impacts.			
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low	
Alternatives	Action		Evaluation	
	Do nothing.		Problem continues.	
	Educate residents on winter mitigation strategies to implement.		Vulnerable populations at risk, problem continues.	
	Use another Village owned vehicle already in-service.		Not safe, vehicle not equipped to service ice-roads.	

Action 2024-KaserV-04. Review Emergency Response Plans

Action Name:	2024-KaserV-04. Review Emergency Response Plans		
Description of the Problem:	The current emergency response plans do not implement monitoring or warning systems to notify residents of incoming hazards such as dam/levee failure, droughts, earthquakes, extreme temperatures, flooding, landslides, severe storms, severe winter storms and wildfire.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire	
Description of the Solution:	The Village will review existing emergency response plans for enhancement opportunities, work with social support agencies, homeowners’ associations, and the general public to develop and implement monitoring and warning systems focused on vulnerable populations and provision of adequate shelter facilities.		
Lead Agency:	Village		
Supporting Agencies:	N/A		
Impact on Critical Facilities/Lifelines:	This action will provide guidance for establishing adequate shelter facilities, further growing the Village’s critical facilities available to the community.		
Estimated Cost:	Low (< \$10,000)		
Potential Funding Sources:	Grant funding where available.		

Implementation Timeline:	Short Term (< 5yrs.)		
Goals Met:	1, 2, 3, 4, 5, 6, 7		
Benefits:	The Village will have better monitoring and warning systems.		
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	Updates to the Emergency Response Plan will help guide efforts in creating shelter facilities and warning systems to assist vulnerable populations during and after a disaster event occurs.		
Impact on Future Development:	N/A		
Climate Change Considerations:	Climate change is leading to an increase in frequency and intensity of precipitation events, which leads to an increase in flooding.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action.		Emergency Response Plan out of date, problem continues.
	Rely on non-profits to address emergency response for vulnerable populations		Possibility for lack of resources and capacity.
	Rely on state emergency response plan procedures.		Not locally specific, problem still continues.

Action 2024-KaserV-05. Certified Floodplain Managers

Action Name:	2024-KaserV-05. Certified Floodplain Managers		
Description of the Problem:	Floodplain management and ordinance enforcement staff are not Certified Floodplain Managers.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The Village will require staff involved in floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs).		
Lead Agency:	Village Clerk, NFIP Floodplain Administrator		
Supporting Agencies:	N/A		
Impact on Critical Facilities/Lifelines:	N/A		

Estimated Cost:	Low (< \$10,000)		
Potential Funding Sources:	Municipal Budget		
Implementation Timeline:	Short Term (<5 yrs.)		
Goals Met:	1, 2, 3, 7		
Benefits:	The Village will have certified floodplain managers.		
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)		<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)		<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	N/A		
Impact on Future Development:	This action would allow local staff to have knowledge on floodplain management and resilience when planning for future development.		
Climate Change Considerations:	This action would take into account current climate change data for local staff to be informed when making planning considerations.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	Do nothing.		The problem would persist.
	Rely on state floodplain management.		The state may not have the capability to provide this service.
	Rely on federal floodplain management.		The federal government may not have the capability to provide this service.

Action 2024-KaserV-06. Community Rating System

Action Name:	2024-KaserV-06. Community Rating System		
Description of the Problem:	The Village is currently not in the CRS program.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature		<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire

Description of the Solution:	The Village will join the Community Rating System (CRS) to reduce flood insurance premiums.	
Lead Agency:	Village	
Supporting Agencies:	N/A	
Impact on Critical Facilities/Lifelines:	The CRS program requires flood mapping and other elements which take include locations of critical facilities and lifelines.	
Estimated Cost:	Low (< \$10,000)	
Potential Funding Sources:	Municipal Budget	
Implementation Timeline:	Short Term (<5 yrs.)	
Goals Met:	1, 2, 3, 7	
Benefits:	The Village will be able to provide reduced flood insurance premiums.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	The CRS program contains actions and elements that include outreach to socially vulnerable populations. Participating as a CRS community will allow flood insurance discounts and premiums for residents.	
Impact on Future Development:	The CRS program has actions and elements which can assist with planning for sustainable future development.	
Climate Change Considerations:	The CRS program incorporates climate change considerations and projections and by participating the Village will be more resilient to climate change impacts.	
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives	Action	Evaluation
	Do nothing.	Will not qualify for discounts on flood insurance and FEMA resources.
	Rely on state resources.	Will not be a participating community in CRS.
	Participate as a class 10 community.	Will not be considered a participating community in CRS.

SECTION 9. JURISDICTIONAL ANNEXES

9.10 VILLAGE OF MONTEBELLO

This jurisdictional annex to the Rockland County Hazard Mitigation Plan (HMP) provides information to assist public and private sectors in the Village of Montebello with reducing losses from future hazard events. This annex is not guidance of what to do when a disaster occurs; its focus is on actions that can be implemented prior to a disaster to reduce or eliminate damage to property and people. The annex presents a general overview of the Village of Montebello, describes who participated in the planning process, assesses the Village’s risk, vulnerability, and capabilities, and outlines a strategy for achieving a more resilient community.

9.10.1 Hazard Mitigation Planning Team

The Village of Montebello identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Village departments. The Village Engineer represented the community on the Rockland County HMP Planning Partnership and Steering Committee and supported the local planning process requirements by securing input from persons with specific knowledge to enhance the plan. All departments were asked to contribute to the annex development through reviewing and contributing to the capability assessment, reporting on the status of previously identified actions, and participating in action identification and prioritization.

Table 9.10-1 summarizes Village officials who participated in the development of the annex and in what capacity. Additional documentation of the Village’s planning activities through Planning Partnership meetings is included in Volume I.

Table 9.10-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Martin Spence, Village Engineer Address: One Montebello Road Montebello, NY 10901 Phone Number: 201-934-0300 Email: mkspence@spenceengineer.com	Name/Title: Lance M. Millman, Village Mayor Address: One Montebello Road Montebello, NY 10901 Phone Number: 845-368-2211 Email: mayor@villageofmontebello.com
National Flood Insurance Program Floodplain Administrator	
Name/Title: Martin Spence, Village Engineer Address: One Montebello Road Montebello, NY 10901 Phone Number: 201-934-0300 Email: mkspence@spenceengineer.com	
Additional Contributors	
Name/Title: Haris Aljovic, Village Engineer (Spence Engineering) Method of Participation: Planning Partnership, Risk Assessment and Mitigation Action Workshops, provided information and feedback on draft documents	

9.10.2 Municipal Profile

The Village of Montebello is in the Town of Ramapo in Rockland County. It is bordered to the north, east and west by the Town of Ramapo, and to the south by the Villages of Suffern and Airmont. The Village is approximately 4.75

square miles in size. The Village was established in 1986 in part to direct and control the intensity and types of land use allowed in the municipality. The interior portion of the Village is marked by a sense of openness, with residential land uses decreasing in density as one travels south to north through the community.

Research has shown that some populations are at greater risk from hazard events because of decreased resources or physical abilities. These populations can be more susceptible to hazard events based on several factors including their physical and financial ability to react or respond during a hazard, and the location and construction quality of their housing. Data from the 2017-2021 American Community Survey indicates that 4.1 percent of the population is 5 years of age or younger, 12.1 percent is 65 years of age or older, 3.5 percent is non-English speaking, 11.1 percent is below the poverty threshold, and 6.5 percent is considered disabled.

9.10.3 Jurisdictional Capability Assessment and Integration

The Village of Montebello performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Volume I describes the components included in the capability assessment and their significance for hazard mitigation planning. The jurisdictional assessment for this annex includes analyses of the following:

- Planning and regulatory capabilities
- Development and permitting capabilities
- Administrative and technical capabilities
- Fiscal capabilities
- Education and outreach capabilities
- Classification under various community mitigation programs
- Adaptive capacity to withstand hazard events

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into day-to-day local government operations. As part of the hazard mitigation analysis, planning and /policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress toward plan integration. Development of an updated mitigation strategy provided an opportunity for the Village of Montebello to identify opportunities for integration of mitigation concepts that can be incorporated into municipal procedures.

Planning, Legal, and Regulatory Capability and Integration

Table 9.10-2 summarizes the regulatory tools that are available to Montebello.

Table 9.10-2. Planning, Legal, and Regulatory Capability and Integration

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Codes, Ordinances, & Regulations				
Building Code	Yes	Chapter 60 – Buildings, Unsafe, 1998	State and Local	Building Inspector
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Building Code specifies the standards for construction of buildings and structures for the Village.				
Zoning/Land Use Code	Yes	Chapter 195 – Zoning, 2003	Local	Zoning Board of Appeals
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Zoning Ordinance implements the goals and objectives of the Comprehensive Plan.				
Subdivision Code	Yes	Chapter 163 – Subdivision of Lane, 1994	Local	Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Subdivisions Ordinance requires measures and reviews to prevent building that would impair flood hazard areas.				
Site Plan Code	Yes	Chapter 146; Chapter 163; Chapter 195, Article IX – Zoning, Site Development Plan Review, 2003	Local	Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Site Plan Ordinance requires measures and reviews to prevent building that would impair flood hazard areas.				
Stormwater Management Code	Yes	Chapter 158 – Stormwater Management	Local	Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The purpose of chapter 158 is to establish minimum stormwater management requirements and controls to protect and safeguard the general health, safety, and welfare of the public within the Village.				
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Real Estate Disclosure	Yes	New York State (NYS) mandate, Property Condition Disclosure Act, NY Code – Article 14 §460-467	State and local	NYS Department of State
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> In addition to facing potential liability for failing to disclose under the exceptions to “caveat emptor,” a home seller must make certain disclosures under the law or pay a credit of \$500 to the buyer at closing. While the PCDA requires a seller to complete a standardized disclosure statement and deliver it to the buyer before the buyer signs the final purchase contract, in practice, most home sellers in New York opt not to complete the statement and instead pay the credit.				
Growth Management	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Environmental Protection Ordinance(s)	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Flood Damage Prevention Ordinance	Yes	Chapter 92 – Flood Damage Prevention, 2014	Federal, State, Local	Village Engineer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The FDPO promotes the public health, safety and general welfare and to minimize public and private losses due to flood conditions in specific areas, by regulating the use of dangerous properties due to water/erosion hazards, requiring facilities to be protected against flood damage during initial construction, controlling dredging activities, and more.				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Wellhead Protection	Yes	Chapter 195, Article 37 – Aquifer and Wellhead Protection, 2018	Local	Zoning Board of Appeals
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The purpose of these aquifer and wellhead protection standards are to protect, preserve, and maintain the quality and quantity of the groundwater resources, which the Village depends upon entirely for its present and future public water supply, as well as for the supply of numerous private wells in the Village and the region.				
Emergency Management Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Climate Change Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Other: Special Purpose Ordinances	Yes	Chapter 153 – Soil Erosion and Sediment Control CDRC – a subcommittee of the Planning Board that provides preliminary reviews (Historic Preservation Commission)	Local	Historic Preservation Commission; CDRC
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The purpose of chapter 153 is to control soil erosion and sediment damages and related environmental damage by requiring adequate provisions for surface water retention and drainage for the protection of exposed soil surfaces to promote the safety, public health, convenience and general welfare of the community.				
Other: Municipal Separate Storm Sewer System (MS4)	Yes	Chapter 158, Section 9 – Stormwater Management, Suspension of access to MS4; illicit discharges in emergency situations (adopted 6/21/2006 by L.L. No. 3-2006)	Local	Stormwater Management Officer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The purpose of chapter 158 is to provide for the health, safety and general welfare of the citizens of the Village of Montebello through the regulation of non-stormwater discharges to the municipal separate storm sewer system (MS4) to the maximum extent practicable as required by federal and New York State law. This article establishes methods for controlling the introduction of pollutants into the MS4 in order to comply with requirements of the general permit for municipal separate storm sewer systems.				
Other: Tree Law	Yes	Chapter 176 Tree Preservation and Landscape	Local	Village Engineer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The purpose of chapter 176 is to control and regulate indiscriminate and excessive removal, cutting, and destruction of trees in order to regulate and prevent conditions which cause increased surface runoff, soil erosion, and cause decreased soil fertility.				
Planning Documents				
General/Comprehensive Plan	Yes	Village of Montebello, NY Comprehensive Plan (10/18/2017)	Local	Village Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The Village of Montebello comprehensive plan identifies the goals and objectives for immediate and future protection and growth of the Village. The plan was originally adopted on May 21, 2003 and updated in 2017. A Comprehensive Review Commission was formed to update the plan.				
Capital Improvement Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Disaster Debris Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Floodplain Management or Watershed Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Stormwater Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Open Space Plan	Yes	Village of Montebello, NY Comprehensive Plan	Local	Village Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Village Comprehensive Plan includes open space plans as decided by the Commission. The plan recommends the creation of a new Recreation and Open Space Zoning District for significant parcels within the Greenprint that have traditionally provided recreation or open space opportunities within the Village. This plan also allows severely constrained privately owned parcels and could serve to allow "hobby" farms and agricultural uses as requested by an applicant.				
Urban Water Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Habitat Conservation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Economic Development Plan	Yes	Village of Montebello, NY Comprehensive Plan	Local	Village Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Economic Development planning was included in the Village Comprehensive Plan. During the update in 2017 the Commission reviewed the 2006 Economic Development Report and provided a status report on the remaining economic development data from tax records.				
Community Wildfire Protection Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Community Forest Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Transportation Plan	Yes	Village of Montebello, NY Comprehensive Plan	Local	Village Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Transportation planning elements were included by the Commission during the 2017 update. The Land Use Element was built upon previous recommendations and now reflects current conditions for major transportation corridors, and more.				
Agriculture Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Climate Action/ Resiliency/Sustainability Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Tourism Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Business/ Downtown Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other (for example NYRCR, etc.)	-	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Response/Recovery Planning				
Comprehensive Emergency Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Continuity of Operations Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Substantial Damage Response Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Threat & Hazard Identification & Risk Assessment	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Post-Disaster Recovery Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Public Health Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other	-	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

Development and Permitting Capability

Table 9.10-3 summarizes the capabilities of Montebello to oversee and track development.

Table 9.10-3. Development and Permitting Capability

Indicate if your jurisdiction implements the following	Yes/No	Comment:
Do you issue development permits? <ul style="list-style-type: none"> If you issue development permits, what department is responsible? If you do not issue development permits, what is your process for tracking new development? 	Yes	The Building Department is responsible for issuing development permits
Are permits tracked by hazard area? (For example, floodplain development permits.)	No	-
Do you have a buildable land inventory? <ul style="list-style-type: none"> If you have a buildable land inventory, please describe 	No	-
Describe the level of build-out in your jurisdiction.	N/A	-

Administrative and Technical Capability

Table 9.10-4 summarizes potential staff and personnel resources available to Montebello and their current responsibilities that contribute to hazard mitigation.

Table 9.10-4. Administrative and Technical Capabilities

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
<i>Administrative Capability</i>		
Planning Board	Yes	The Planning Board has the responsibility to review site plans submitted for real estate development prior to construction. In reviewing the site plans, the Planning Board considers such elements as environmental impact, access, parking, screening, signs, landscaping, location and dimensions of buildings, adjacent land use and physical features meant to protect those uses. The Planning Board then makes recommendations to the applicant with respect to those elements before decision whether to accept the site plan.
Zoning Board of Adjustment	Yes	The Zoning Board of Appeals is an appointed Board that is charged with the duty of hearing appeals from any decisions of the Building Inspector. While it is the Board of Trustees that enacts the zoning laws, it is the Zoning Board of Appeals which decides on individual applications for variances from these laws. The application for a variance may be based upon a non-conforming “use” or purpose of the property or it may be based upon a non-conforming “area” relating to the dimensions or physical requirements of the zoning.
Planning Department	No	-
Mitigation Planning Committee	No	-
Environmental Board/Commission	No	-
Open Space Board/Committee	No	-
Economic Development Commission/Committee	No	-
Public Works/Highway Department	No	-

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
Construction/Building/Code Enforcement Department	Yes	<p>The Building Department reviews building permit applications and reviews applications from the Planning and Zoning Boards and conducts inspections to ensure construction projects are safe and meet applicable codes. The Building Department also has responsibility for code enforcement to ensure quality of life is maintained within the Village.</p> <p>Any Stormwater complaints including suspected Illicit Discharge should be reported to the Building Department.</p>
Emergency Management/Public Safety Department	Yes	Rockland County Emergency Management
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	No	-
Mutual aid agreements	Yes	Stormwater Consortium of Rockland County
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	Yes	There are no job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk.
Other: Historic Preservation and Parks Commission		<p>The Montebello Historic Preservation and Parks Commission (HPPC), formed by the merger of the Historic Preservation Commission (HPC) and the Parks Commission (PC) in 2019, is charged with preserving the historic and aesthetic character of our buildings, neighborhoods, and parklands. Ongoing commitment to preserving our history and green space and dedication to its stewardship is the mission of the Montebello HPPC. The HPPC consists of seven full-time members and two ad-hoc members, charged with protecting and advocating for the Village’s historic and aesthetic resources, in addition to reviewing requests for historic designation of individual properties or districts.</p>
<i>Technical/Staffing Capability</i>		
Planners or engineers with knowledge of land development and land management practices	Yes	Village Engineer
Engineers or professionals trained in building or infrastructure construction practices	Yes	Village Engineer
Planners or engineers with an understanding of natural hazards	Yes	Village Engineer
Staff with expertise or training in benefit/cost analysis	No	-
Professionals trained in conducting damage assessments	No	-
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	No	-
Environmental scientist familiar with natural hazards	No	-
Surveyor(s)	No	-
Emergency Manager	Yes	Rockland County
Grant writer(s)	Yes	Village Engineer (selectively)
Resilience Officer	No	-

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
Other (this could include stormwater engineer, environmental specialist, etc.)	No	-

Fiscal Capability

Table 9.10-5 summarizes financial resources available to Montebello.

Table 9.10-5. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use? (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	Yes, Village Board
Capital improvements project funding	Yes, Village Board
Authority to levy taxes for specific purposes	Yes, Village Board
User fees for water, sewer, gas or electric service	No
Impact fees for homebuyers or developers of new development/homes	Yes, Village Board
Stormwater utility fee	No
Incur debt through general obligation bonds	Yes, Village Board
Incur debt through special tax bonds	N/A
Incur debt through private activity bonds	N/A
Withhold public expenditures in hazard-prone areas	Yes, Village Board
Other federal or state Funding Programs	Yes - Consolidated Local Street and Highway Improvement Program (CHIPs) through NYSDOT
Open Space Acquisition funding programs	Yes, Village Board
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	No

Education and Outreach Capability

Table 9.10-6 summarizes the education and outreach resources available to Montebello.

Table 9.10-6. Education and Outreach Capabilities

Outreach Resources	Available? (Yes/No)	Comment:
Public information officer or communications office	No	-
Personnel skilled or trained in website development	Yes	Contracted
Hazard mitigation information available on your website	Yes	The Village provides public outreach to inform citizens on natural hazards. This includes the municipal website, flyers, and the annual Montebello Day.
Social media for hazard mitigation education and outreach	No	-
Citizen boards or commissions that address issues related to hazard mitigation	No	-
Warning systems for hazard events	Yes	The County utilizes NY-Alert and CodeRed (the backup to NY-Alert) for emergency notifications (all Towns and Villages have access to it).
Natural disaster/safety programs in place for schools	No	-

Outreach Resources	Available? (Yes/No)	Comment:
Organizations that conduct outreach to socially vulnerable populations and underserved populations	No	-
Public outreach mechanisms / programs to inform citizens on natural hazards, risk, and ways to protect themselves during such events	Yes	-
If yes, please describe.	N/A	The Village maintains a website that provides links to the various municipal departments, local laws and planning documents, Village newsletter, news updates, and links to local, county, state, and federal governments. The Village provides public outreach to inform citizens on natural hazards. This includes the municipal website, flyers, and the annual Montebello Day.

Community Classifications

Table 9.10-7 summarizes classifications for community programs available to Montebello.

Table 9.10-7. Community Classifications

Program	Participating? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	No	-	-
New York State Department of Environmental Conservation (NYSDEC) Climate Smart Community	Yes	N/A	N/A
National Weather Service Storm Ready Certification	No	-	-
Firewise Communities classification	No	-	-
Other: Organizations with mitigation focus (advocacy group, non-government)	-	-	-

N/A = Not applicable

— = Unavailable

Adaptive Capacity

Adaptive capacity is defined as “the ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or respond to consequences” (IPCC, 2022). Each jurisdiction has a unique combination of capabilities to adjust to, protect from, and withstand a future hazard event, future conditions, and changing risk. Table 9.10-8 summarizes the adaptive capacity for each identified hazard of concern and the Village’s capability to address related actions using the following classifications:

- Strong: Capacity exists and is in use.
- Moderate: Capacity might exist; but is not used or could use some improvement.
- Weak: Capacity does not exist or could use substantial improvement.

Table 9.10-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Disease Outbreak	Moderate
Drought	Moderate
Earthquake	Moderate
Extreme Temperature	Moderate
Flood	Moderate
Landslide	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

9.10.4 National Flood Insurance Program Compliance

This section provides specific information on the management and regulation of the regulatory floodplain, including current and future compliance with the National Flood Insurance Program (NFIP). The floodplain administrator listed in Table 9.10-1 is responsible for maintaining this information.

NFIP Summary

Table 9.10-9 summarizes the NFIP statistics for Montebello.

Table 9.10-9. Village of Montebello NFIP Summary of Policy and Claim Statistics

# Policies	35
# Claims (Losses)	55
Total Loss Payments	\$1,404,227
# Repetitive Loss Properties (NFIP definition)	1
# Repetitive Loss Properties (FMA definition)	6
# Severe Repetitive Loss Properties	0
# Policies Within the 1percent Annual Chance Flood Boundary	0

NFIP Definition of Repetitive Loss: The NFIP defines a repetitive loss property as any insurable building for which two or more claims of more than \$1,000 were paid by the NFIP within any rolling 10-year period since 1978.

FMA Definition of Repetitive Loss: FEMA’s Flood Mitigation Assistance (FMA) program defines a repetitive loss property as any insurable building that has incurred flood-related damage on two occasions, in which the cost of the repair, on average, equaled or exceeded 25 percent of the market value of the structure at the time of each such flood event.

Definition of Severe Repetitive Loss: A residential property covered under an NFIP flood insurance policy and: (a) That has at least four NFIP claim payments over \$5,000 each, and the cumulative amount of such claims payments exceeds \$20,000; or (b) For which at least two separate claims payments have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building. At least two of the claims must have occurred within any 10-year period, more than 10 days apart.

Source: FEMA, December 2023

Note: RL count may include properties also identified as SRL.

Flood Vulnerability Summary

Table 9.10-10 provides a summary of the NFIP program in Montebello.

Table 9.10-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	Areas along Mahwah River, SW corner of the village including Lake Rd as well as Marian Dr.
Do you maintain a list of properties that have been damaged by flooding?	N/A
Do you maintain a list of property owners interested in flood mitigation?	N/A
How many homeowners and/or business owners are interested in mitigation (elevation or acquisition)?	N/A
Are any RiskMAP projects currently underway in your jurisdiction? <ul style="list-style-type: none"> If so, state what projects are underway. 	N/A
How do you make Substantial Damage determinations?	If needed, Building Department and Village Engineer would perform an onsite inspection.
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	Unknown
How many properties have been mitigated (elevation or acquisition) in your jurisdiction? <ul style="list-style-type: none"> If there are mitigation properties, how were the projects funded? 	Two properties, 8 Lake Rd and 14 Lake Rd, both FEMA acquisitions.
Do your flood hazard maps adequately address the flood risk within your jurisdiction? <ul style="list-style-type: none"> If not, state why. 	Yes
NFIP Compliance	
What local department is responsible for floodplain management?	Village Engineer
Are any certified floodplain managers on staff in your jurisdiction?	Village Engineer
Do you have access to resources to determine possible future flooding conditions from climate change?	N/A
Does your floodplain management staff need any assistance or training to support its floodplain management program? <ul style="list-style-type: none"> If so, what type of assistance/training is needed? 	Yes, seminars with current trends and data.
Provide an explanation of NFIP administration services you provide (e.g., permit review, GIS, education/outreach, inspections, engineering capability)	N/A
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	During review, calculations of increase in volume and SF determined.
What are the barriers to running an effective NFIP program in the community, if any?	N/A
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? <ul style="list-style-type: none"> If so, state the violations. 	N/A
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	May 6, 2020
What is the local law number or municipal code of your flood damage prevention ordinance?	Chapter 92 Flood Damage prevention
What is the date that your flood damage prevention ordinance was last amended?	The most recent FDPO for the Village was amended in 2014.

NFIP Topic	Comments
Does your floodplain management program meet or exceed minimum requirements? • If exceeds, in what ways?	Meet
Are there other local ordinances, plans or programs (e.g., site plan review) that support floodplain management and meeting the NFIP requirements? For instance, does the planning board or zoning board consider efforts to reduce flood risk when reviewing variances such as height restrictions?	N/A
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	The Village is not a part of the CRS program but would be interested in joining. The Village has included this as an action.

9.10.5 Growth/Development Trends

Understanding how past, current, and projected development patterns have or are likely to increase or decrease risk in hazard areas is a key component to appreciating a jurisdiction’s overall risk to its hazards of concern. Recent and expected future development trends, including major residential/commercial development and major infrastructure development, are summarized in Table 9.10-11 through Table 9.10-13.

Table 9.10-11. Number of Building Permits for New Construction Issued Since the Previous HMP

	New Construction Permits Issued			Total
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	
2019				
Total Permits	11	-	-	11
Permits within SFHA	0	-	-	-
2020				
Total Permits	15	-	-	15
Permits within SFHA	0	-	-	-
2021				
Total Permits	17	-	-	17
Permits within SFHA	0	-	-	-
2022				
Total Permits	28	-	-	28
Permits within SFHA	0	-	-	-
2023				
Total Permits	32	-	-	32
Permits within SFHA	0	-	-	-

SFHA = Special Flood Hazard Area (1percent flood event)

Table 9.10-12. Recent Major Development and Infrastructure from 2018 to Present

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
The Sentinel of Rockland	Assisted Living	1 Building, 200 bed Facility	200 Rella Blvd, 55.08-1-9	-	Completed, CO issued
Manhattan Beer Distributors	Distribution center	Extension + New 2 story Building	20 Dunnigan Dr	-	Under Construction, Estimated Completion Fall of 2024
Weinberger Subdivision	Residential Subdivision	46 Individual lots	Entrance at Grandview Ave	-	Phase A (10 Lots) Under Construction, Road and Utilities

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
Montebello Crossings	Assisted Living	3 story + basement, 200 bed facility	250 Lafayette Ave	-	Under Construction
Ware Subdivision	Residential Subdivision	3 Individual lots	Wilbur Rd	-	Under Construction
H & S Office Building	Existing Building – Site Improvements	1 Building	49 N Airmont Rd	-	Near Completion
Montebello Gateway	Office Building	1 Building	34 N Airmont Rd	-	Under Construction

* Only location-specific hazard zones or vulnerabilities identified.

Table 9.10-13. Known or Anticipated Major Development and Infrastructure in the Next Five Years

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
ACG Warehouse and Distribution	Distribution center	2 Buildings	100-300 Rella Blvd	-	Anticipated Start in the Spring of 2024

* Only location-specific hazard zones or vulnerabilities identified.

9.10.6 Jurisdictional Risk Assessment

The hazard profiles in Volume I provide detailed information regarding each planning partner’s vulnerability to the identified hazards, including summaries of the Village of Montebello risk assessment results and data used to determine the hazard ranking. Key local risk assessment information is presented below.

Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Village are shown in Figure 9.10-1 through Figure 9.10-2. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps are provided only for hazards that can be identified clearly using mapping techniques and technologies and for which Montebello has significant exposure. The maps show the location of potential new development, where available.

Figure 9.10-1. Village of Montebello Flood and Dam Inundation Hazard Area Extent and Location

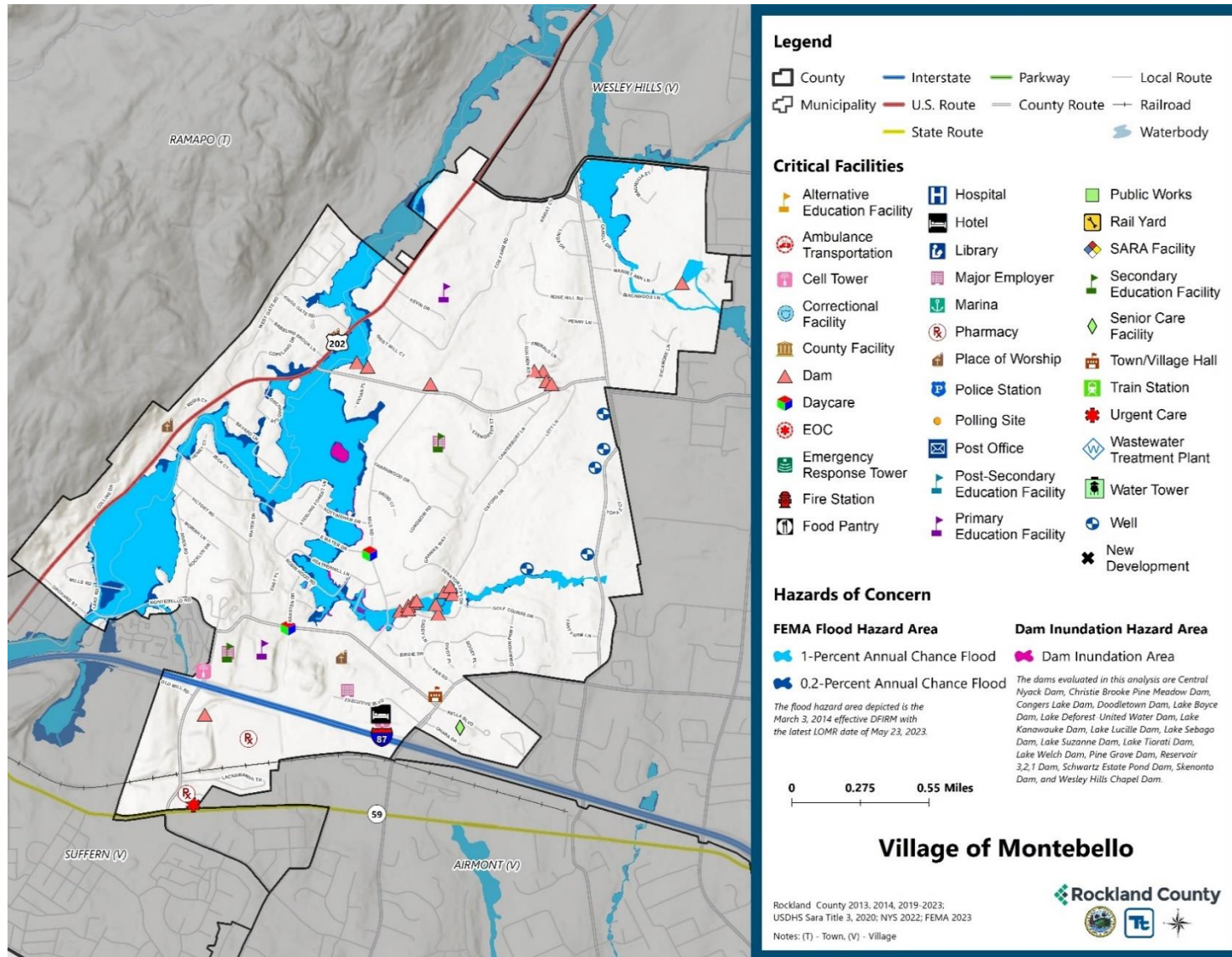
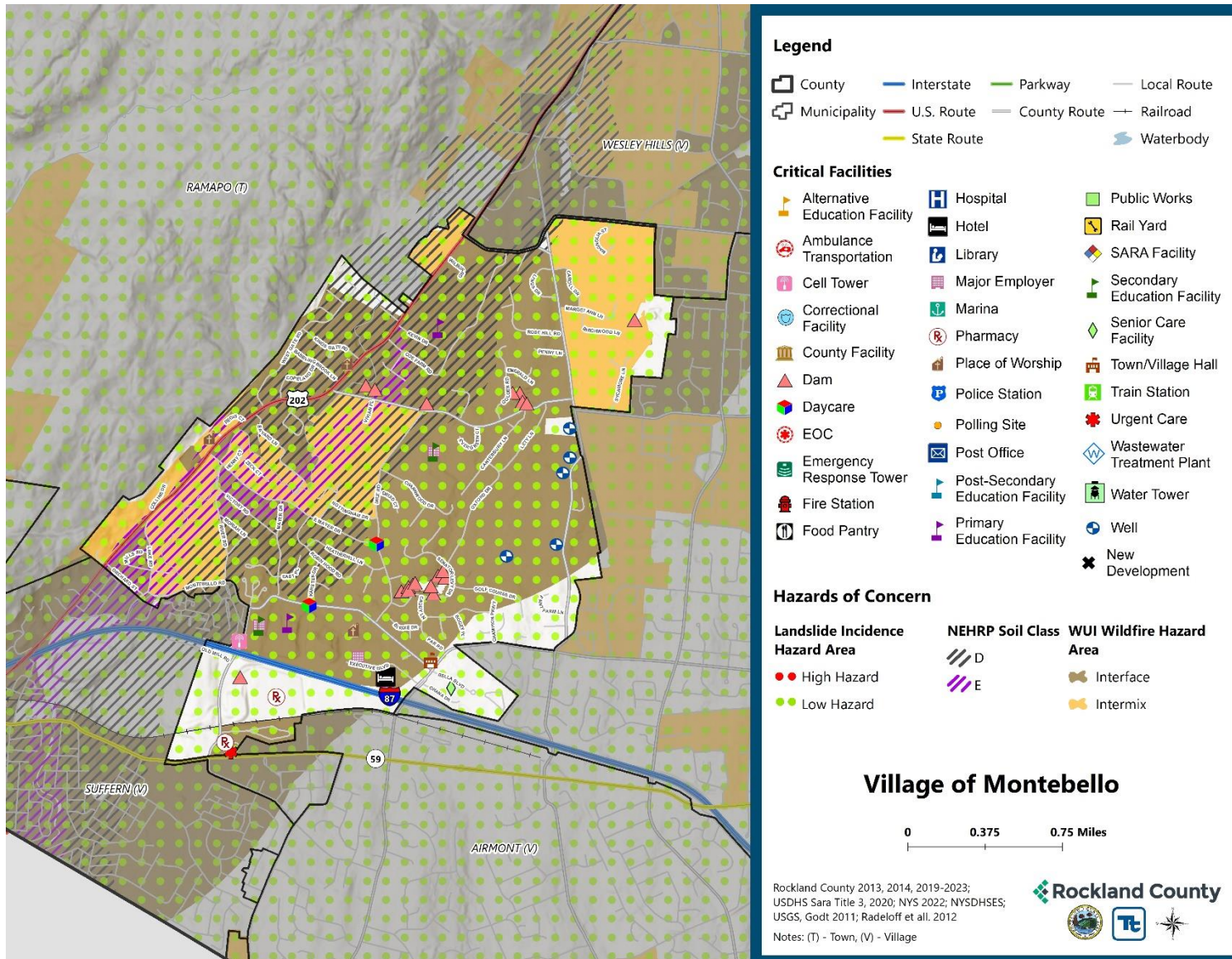


Figure 9.10-2. Village of Montebello Landslide, Earthquake, and Wildfire Hazard Area Extent and Location



Hazard Event History

The history of natural and non-natural hazard events in the Village of Montebello is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 9.10-14 provides details on loss and damage in the Village during hazard events since the last hazard mitigation plan update.

Table 9.10-14. Hazard Event History in the Village of Montebello

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Summary of Damage and Losses in the Village
Jan 20, 2020 - May 11, 2023	New York Covid-19 (3434-EM-NY, 4480-DR-NY)	Yes	The Covid-19 pandemic resulted in nationwide shutdowns, social distancing and masking requirements, and immunization efforts. Since the start of the pandemic, roughly 950 deaths have been reported in Rockland County. The federal Public Health Emergency expired in May 2023 but illness continues to occur as the virus shifts to becoming endemic.	The Village followed mandated social distancing and business/public closures which impacted the economy and health of the community.
August 4, 2020	New York Tropical Storm Isaias (4567-DR-NY)	Yes	The center of Isaias passed about 65 miles west of New York City at 3 pm on August 4, 2020. Tropical storm force winds extended well east of the center of circulation. In addition, 1 to 3 inches of rainfall, highest west, were recorded across the county. These types of winds and rainfall across the area resulted in numerous trees and tree limbs being downed, power outages, damages to homes and automobiles, and disruption to transit.	No recorded major losses for the Village for Isaias.
August 21-24, 2021	New York Hurricane Henri (3565-EM-NY)	Yes	Rainfall from Tropical Storm Henri resulted in widespread flash flooding across southeastern New York, particularly portions of the Lower Hudson Valley. Rainfall totals generally ranged from 2-5 inches, with this rain coming in addition to the 2-5 inches that fell during the predecessor rainfall event the night before.	No recorded major losses for the Village for Henri.

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Summary of Damage and Losses in the Village
September 1-3, 2021	New York Remnants of Hurricane Ida (3572-EM-NY, 4615-DR-NY)	Yes	Extremely heavy rainfall associated with the remnants of Hurricane Ida overspread southeast New York during the evening of September 1 and continued through the early morning hours of September 2. Rainfall totals ranged from 5-8 inches across much of the region, with much of that rain falling in just a few hours. This resulted in widespread catastrophic flash flooding.	No recorded major losses for the Village for Ida.

EM = Emergency Declaration (FEMA)
 FEMA = Federal Emergency Management Agency
 DR = Major Disaster Declaration (FEMA)
 N/A = Not applicable

Hazard Ranking and Vulnerabilities

The hazard profiles in Volume I have detailed information regarding each planning partner’s vulnerability to the identified hazards. The following summarizes presents key risk assessment results for the Village of Montebello.

Hazard Ranking

The participating jurisdictions have differing degrees of vulnerability to the hazards of concern, so each jurisdiction ranked its own degree of risk to each hazard. The community-specific hazard ranking is based on problems and impacts identified by the risk assessment presented in Volume I. The ranking process involves an assessment of the likelihood of occurrence for each hazard; the potential impacts of the hazard on people, property, and the economy; community capabilities to address the hazard; and changing future climate conditions. Montebello reviewed the County hazard ranking and individual results to assess the relative risk of the hazards of concern to the community. Table 9.10-15 shows Montebello’s final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 9.10-15. Hazard Ranking

Hazard	Rank
Dam Failure	Low
Disease Outbreak	Medium
Drought	Medium
Earthquake	Low
Extreme Temperature	Medium
Flood	Medium
Landslide	Low
Severe Weather	High
Severe Winter Weather	High
Wildfire	Medium

Note: The scale is based on the hazard rankings established in Volume I, modified as appropriate based on review by the jurisdiction

Critical Facilities

Table 9.10-16 identifies critical facilities in the community located in the 1 percent and 0.2 percent annual chance floodplains.

Table 9.10-16. Critical Facilities Flood Vulnerability

Name	Type	Exposure		Addressed by Proposed Action	Already Protected to 0.2percent Flood Level (describe protections)
		1percent Event	0.2percent Event		
Ramapo Pond Dam	Dam	Yes	Yes	2024-MontebelloV-16	Designed with emergency spillways.
Schwartz Estate Pond Dam 1	Dam	Yes	Yes	2024-MontebelloV-16	Designed with emergency spillways.
Schwartz Estate Pond Dam 7	Dam	Yes	Yes	2024-MontebelloV-16	Designed with emergency spillways.
Schwartz Estate Pond Dam 2	Dam	Yes	Yes	2024-MontebelloV-16	Designed with emergency spillways.
Schwartz Estate Pond Dam 3	Dam	Yes	Yes	2024-MontebelloV-16	Designed with emergency spillways.
Schwartz Estate Pond Dam 4	Dam	Yes	Yes	2024-MontebelloV-16	Designed with emergency spillways.
Schwartz Estate Pond Dam 5	Dam	Yes	Yes	2024-MontebelloV-16	Designed with emergency spillways.
Schwartz Estate Pond Dam 6	Dam	Yes	Yes	2024-MontebelloV-16	Designed with emergency spillways.
Schwartz Estate Pond Dam A	Dam	Yes	Yes	2024-MontebelloV-16	Designed with emergency spillways.
Schwartz Pond Dam	Dam	Yes	Yes	2024-MontebelloV-16	Designed with emergency spillways.
Sichol Dam No 2	Dam	Yes	Yes	2024-MontebelloV-16	Designed with emergency spillways.

Source: Rockland County 2023, FEMA

Identified Issues

After review of the Village of Montebello’s hazard event history, hazard rankings, hazard location, and current capabilities, the Village of Montebello identified the following vulnerabilities within their community:

- The Village does not have intermunicipal agreements set up with neighboring municipalities to help handle dam/levee failure, disease outbreak, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, and wildfire. Coordination between municipalities can lead to additional assistance during times of need. The schools that are located in the Village currently do not have any hazard drill systems severe weather drill system in place. Schools need to implement drills for dam/levee failure, earthquakes, flooding, landslides, severe storms, severe winter storms, and wildfire. Some critical facilities in the Village lack backup power and cannot perform daily functions during outages. Some critical facilities operate as shelters, emergency operation centers and PPE distribution centers for dam/levee failure, disease outbreak, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, and wildfire. Critical facilities lack backup power. The current comprehensive

plan does not incorporate natural disaster mitigation techniques for dam/levee failure, disease outbreak, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, and wildfires. The Village does not have access to updated GIS datasets, nor do they have updated maps for the Village that help showcase risks from dam/levee failure, disease outbreak, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, and wildfire. GIS mapping needs to be updated for the Village. Current zoning and planning ordinances and codes do not incorporate natural hazards and hazard mitigation, including the hazards of concern which are dam/levee failure, disease outbreak, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, and wildfire. Floodplain management practices are not being closely monitored and followed which means properties located within the floodplain are more at risk. Best management practices need to stay up to date in order to ensure properties are protected in the floodplain areas. There are some critical facilities in the Village that were built before code updates; therefore, they may be more susceptible to damage from a hazard event. The Village currently does not have a comprehensive education and outreach program and residents are not fully knowledgeable about storm preparation, response, and recovery for dam/levee failure, disease outbreak, droughts, earthquakes, extreme temperatures, flood, landslide, severe storm, severe winter storm, and wildfire. The Village has some facilities that were built before code updates; therefore, they may be more susceptible to damage from a hazard events such as dam/levee failure, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, and wildfire. The Floodplain Damage Prevention Ordinance was last updated in 2014 and is need of an update to match the current requirements and will also need to be updated during the review and implementation of new FIRMs. Floodplain management and ordinance enforcement staff are not Certified Floodplain Managers. The Village is currently not in the CRS program to reduce flood insurance premiums. Three pump stations are located in the floodplain and are potentially vulnerable to flood events. Critical facilities located in the floodplain are not only susceptible to flood damage but also create unnecessary complications for the municipality during an emergency event and during post-disaster recovery.

- The following dams are exposed to the 1 percent and 0.2 percent flood event which may result in dam failure:
 - Ramapo Pond Dam
 - Schwartz Estate Pond Dam 1
 - Schwartz Estate Pond Dam 7
 - Schwartz Estate Pond Dam 2
 - Schwartz Estate Pond Dam 3
 - Schwartz Estate Pond Dam 4
 - Schwartz Estate Pond Dam 5
 - Schwartz Estate Pond Dam 6
 - Schwartz Estate Pond Dam A
 - Schwartz Pond Dam
 - Sichel Dam No 2

**This issue was identified as a specific area of concern based on resident response to the Rockland County Hazard Mitigation Citizen survey.*

9.10.7 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and prioritizes actions to address over the next five years.

Past Mitigation Initiative Status

Table 9.10-17 indicates progress on the County's mitigation strategy identified in the 2019 HMP. Actions that are still recommended but not completed or that are in progress are carried forward and combined with new actions as part of the mitigation strategy for this plan update. Previous actions that are now ongoing programs and capabilities are indicated as such and are presented in the capability assessment earlier in this annex.

Additional Mitigation Efforts

In addition to the mitigation initiatives completed in Table 9.10-17, Montebello identified the following mitigation efforts completed since the last HMP:

- Stormwater management was implemented in lower areas of the Village which are subject to severe flooding.
- The Village continues to enhance municipal website to provide public information regarding severe weather events and other activities within the Village.
- The Village has worked with homeowners along Lake Road to explore mitigation opportunities and where appropriate and feasible, carry out acquisition, relocation, elevation and floodproofing measures to protect these properties.
- Worked with Rockland County to develop specific mitigation solutions for flood prone road systems in the Village.
- The Village continues to work with Rockland County to obtain access to the functional-needs registry as part of the Village's emergency response plan.
- The Village continues to enforce NYS and local building codes.

Since the adoption of the County's first HMP, Montebello has made significant mitigation progress in the following areas:

- Stormwater management
- Public engagement and outreach
- County and State coordination

Table 9.10-17. Status of Previous Mitigation Actions

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Montebello-1	Stormwater management with special attention to lower areas of the Village.	Severe Storm, Flood	Village	The lower areas of the Village are subject to stormwater flooding. Stormwater management with special attention to lower areas of the Village.	1. Completed 2. Stormwater management was conducted in the lower areas of the Village.	1. Discontinue 2. N/A 3. Completed
V. Montebello-2	Hazard Mitigation Partnership	All Hazards	Village	Coordination between municipalities can lead to additional assistance during times of need. Develop partnership with neighboring villages to coordinate efforts related to hazard mitigation.	1. No Progress 2. A challenge has been staff availability and capabilities between municipalities.	1. Include 2. N/A 3. N/A
V. Montebello-3	Public Awareness Program	All Hazards	Village	Need to keep public awareness programs up to date. Continue to enhance municipal website to provide public information regarding severe weather events and other activities within the Village.	1. Ongoing 2. The Village website is continuously updated to include information regarding severe weather events.	1. Discontinue 2. N/A 3. Ongoing capability
V. Montebello-4	Hazard Drills	All Hazards	School District	The schools currently do not have a severe weather drill system in place. Establish severe weather drills each semester in all village schools.	1. In Progress 2. A challenge has been school availability to conduct severe weather drills each semester.	1. Include 2. N/A 3. N/A

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Montebello-5	Back-Up Power for Critical Facilities	All Hazards	Town of Ramapo Public Works	Critical facilities lack backup power. Provide backup power for all critical public facilities (sewer pump station and other critical public buildings).	1. In Progress 2. A challenge has been Village resources to provide this function.	1. Include 2. N/A 3. N/A
V. Montebello-6	Comprehensive Plan Update	All Hazards	Village, Rockland County Planning	The current comprehensive plan does not incorporate natural disaster mitigation techniques. The comprehensive plan update committee will work to update the comprehensive plan and ensure that natural disaster mitigation techniques are incorporated.	1. In Progress 2. A challenge has been the committee's availability to incorporate the additional elements to the Village Comprehensive Plan.	1. Include 2. N/A 3. N/A
V. Montebello-7	Update GIS Mapping	All Hazards	Village Trustee	GIS mapping needs to be updated for the Village. Work with the Stormwater Consortium of Rockland County to update GIS mapping for the Village.	1. In Progress 2. A challenge has been coordination with the County Consortium to update GIS mapping.	1. Include 2. N/A 3. N/A
V. Montebello-8	Public Workshops	All Hazards	Village	Current zoning and planning issues need to incorporate natural hazards and hazard mitigation. Hold periodic workshops regarding zoning and planning issues that arise regarding natural hazards and hazard mitigation.	1. In Progress 2. A challenge is staff availability and capabilities.	1. Include 2. N/A 3. N/A

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Montebello-9	Floodplain Management Best Practices	Flood	Village	Best management practices need to stay up to date in order to ensure properties are protected in the floodplain areas. Continue to implement best management practices for floodplain areas.	1. In Progress 2. A challenge has been staff availability to make updates to best management practice regularly.	1. Include 2. N/A 3. N/A
V. Montebello-10	Lake Road Flood Mitigation	Flood	Village	Many homes along Lake Road have been damaged by flooding and are susceptible to future damage (they currently are not protected from flood events). Work with homeowners along Lake Road to explore mitigation opportunities and if appropriate and feasible, carry out acquisition, relocation, elevation and floodproofing measures to protect these properties.	1. Completed 2. The Village has worked with homeowners along Lake Road to discuss applicable mitigation opportunities.	1. Discontinue 2. N/A 3. Completed
V. Montebello-11	Flood Prone Roadways	Severe Storm, Flood	Village Trustee	Flood prone roads can inhibit emergency response and evacuation during a flood. Work with Rockland County to develop specific mitigation solutions for flood prone road systems in the Village.	1. Completed 2. The Village has worked with the County through the HMP update process to develop mitigation solutions for the Village where flooding occurs.	1. Discontinue 2. N/A 3. Completed

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Montebello-12	Critical Facility Protection Measures	All Hazards	Village Trustee	<p>Some facilities were built before code updates; therefore, they may be more susceptible to damage from a hazard event.</p> <p>Work with the Town of Ramapo and adjacent villages (Airmont and Suffern) to determine the year built and level of protection for critical emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide some degree of protection from natural hazards and pursue potential mitigation opportunities to protect these sites as funding becomes available.</p>	<p>1. No Progress 2. A challenge has been coordination and availability between both municipalities.</p>	<p>1. Include 2. N/A 3. N/A</p>
V. Montebello-13	Emergency Response Plan Update	All Hazards	Village, Rockland County	<p>The current emergency response plan does not include the functional-needs registry.</p> <p>Work with Rockland County to obtain access to the functional-needs registry as part of the Village's emergency response plan.</p>	<p>1. Ongoing 2. The Village continues to work with the county on the Emergency Response Plan.</p>	<p>1. Discontinue 2. N/A 3. Ongoing capability</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Montebello-14	Develop Public Awareness Program	All Hazards	Village, Rockland County	<p>The Village currently does not have a comprehensive education and outreach program. There is a need to educate residents about storm preparation, response, and recovery.</p> <p>Develop and enhance the public awareness program on hazards, prevention, and mitigation. Continue to work with Rockland County on their program that provides information to the municipalities.</p>	<p>1. In Progress 2. A challenge has been staff availability.</p>	<p>1. Include 2. N/A 3. N/A</p>
V. Montebello-15	Review and Update Village Codes	All Hazards	Village	<p>Some facilities were built before code updates; therefore, they may be more susceptible to damage from a hazard event.</p> <p>Code update: review existing local codes and ordinances against the identified hazards to determine whether there needs to be any amendments to address identified hazards and, where a need is identified; modify/amend the codes/ordinances as applicable.</p>	<p>1. No Progress 2. A challenge has been staff availability.</p>	<p>1. Include 2. N/A 3. N/A</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Montebello-16	Code Enforcement	All Hazards	Village	Some facilities were built before code updates; therefore, they may be more susceptible to damage from a hazard event. Continue enforcement of NYS and local building codes.	1. Ongoing 2. N/A	1. Discontinue 2. N/A 3. Ongoing capability
V. Montebello-17	Flood Damage Prevention Ordinance Update, FEMA Regulations	Flood	Village	Some facilities were built before code updates; therefore, they may be more susceptible to damage from a hazard event. Update/revise floodplain management ordinance to comply with latest FEMA regulations.	1. No Progress 2. A challenge has been staff availability.	1. Include 2. N/A 3. N/A
V. Montebello-18	Flood Damage Prevention Ordinance Update, FIRM	Flood	Village	Some facilities were built before code updates; therefore, they may be more susceptible to damage from a hazard event. Update/review floodplain management ordinances to be consistent with potential future new FIRMs.	1. No Progress 2. A challenge has been staff availability.	1. Include 2. N/A 3. N/A

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Montebello-19	Certified Floodplain Managers	Flood	Village	Floodplain management and ordinance enforcement staff are not Certified Floodplain Managers. Require staff involved in floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs).	1. No Progress 2. A challenge has been staff availability.	1. Include 2. N/A 3. N/A
V. Montebello-20	Community Rating System	Flood	Village	The Village is currently not in the CRS program. Join the Community Rating System (CRS).	1. No Progress 2. A challenge has been staff availability.	1. Include 2. N/A 3. N/A

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Montebello-21	Critical Facilities in Floodplain	Flood	SUEZ-Private Property Owner and Village support	<p>Three pump stations are located in the floodplain and potentially vulnerable to flood events. Critical facilities located in the floodplain are not only susceptible to flood damage but also create unnecessary complications for the municipality during an emergency event and post-disaster recovery.</p> <p>The Village does not have jurisdiction over these facilities to mitigate; they are privately owned by SUEZ. The Village will notify and provide needed support their facility manager/operator of FEMA grant funding support to determine what mitigation options are needed, if any and NYS requirements to mitigate to the 500-year flood event or “worst damage scenario”.</p>	<p>1. No Progress 2. A challenge has been coordinating with those who have jurisdiction over these facilities to mitigate them.</p>	<p>1. Include 2. N/A 3. N/A</p>

Proposed Hazard Mitigation Initiatives for the HMP Update

Montebello participated in the mitigation strategy workshop for this HMP to identify appropriate actions to include in a local hazard mitigation strategy. Its comprehensive consideration of all possible activities to address hazards of concern included review of the following FEMA documents:

- FEMA 551 “Selecting Appropriate Mitigation Measures for Floodprone Structures” (March 2007)
- FEMA “Mitigation Ideas—A Resource for Reducing Risk to Natural Hazards” (January 2013).

The action worksheets included at the end of this annex list the mitigation actions that Montebello would like to pursue in the future to reduce the effects of hazards. The actions are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in the Village’s priorities.

Volume I identifies 14 evaluation criteria for prioritizing the mitigation actions. To assist with rating each mitigation action as high, medium, or low priority, a numeric rank is assigned (-1, 0, or 1) for each of the evaluation criteria. Table 2-19 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Table 9.10-18 indicates the range of proposed mitigation action categories. The four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table to further demonstrate the wide range of activities and mitigation measures selected.

Volume I identifies 14 evaluation criteria for prioritizing the mitigation actions. To assist with rating each mitigation action as high, medium, or low priority, a numeric rank is assigned (-1, 0, or 1) for each of the evaluation criteria. Table 9.10-19 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Table 9.10-18. Analysis of Mitigation Actions by Hazard and Category

Hazard	FEMA				CRS					
	LPR	SIP	NSP	EAP	PR	PP	PI	NR	SP	ES
Dam Failure	3	1	-	5	2	1	6	-	-	-
Disease Outbreak	2	1	-	3	1	1	4	-	-	-
Drought	3	1	-	3	2	1	4	-	-	-
Earthquake	4	1	-	4	3	1	4	-	-	-
Extreme Temperature	3	1	-	3	2	1	5	-	-	-
Flood	7	2	-	6	6	2	7	-	-	-
Landslide	3	1	-	4	2	1	5	-	-	-
Severe Weather	4	1	-	4	3	1	5	-	-	-
Severe Winter Weather	4	1	-	4	3	1	5	-	-	-
Wildfire	4	1	-	4	3	1	5	-	-	-

Local Plans and Regulations (LPR)—These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.

Structure and Infrastructure Project (SIP)—These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct structures to reduce the impact of hazards.

Natural Systems Protection (NSP)—These are actions that minimize damage and losses and preserve or restore the functions of natural systems.

Education and Awareness Programs (EAP)—These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities

Preventative Measures (PR)—Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.

Property Protection (PP)—These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.

Public Information (PI)—Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.

Natural Resource Protection (NR)—Actions that minimize hazard loss and preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.

Structural Flood Control Projects (SP)—Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.

Emergency Services (ES)—Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities

Table 9.10-19. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Other Community Objectives	Total	High / Medium / Low
2024-MontebelloV-01	Hazard Mitigation Partnership	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	High
2024-MontebelloV-02	Hazard Drills	1	0	1	0	0	0	0	1	1	1	0	1	0	1	7	Medium
2024-MontebelloV-03	Back-Up Power for Critical Facilities	1	0	1	0	0	0	0	1	1	1	0	1	1	1	8	Medium
2024-MontebelloV-04	Comprehensive Plan Update	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	High
2024-MontebelloV-05	Update GIS Mapping	1	1	1	0	0	0	1	1	0	1	1	1	1	1	10	Medium
2024-MontebelloV-06	Public Workshops	1	1	1	0	0	0	1	1	0	1	1	1	1	1	10	Medium
2024-MontebelloV-07	Floodplain Management Best Practices	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	High
2024-MontebelloV-08	Critical Facility Protection Measures	1	1	1	0	0	1	0	1	1	1	1	1	1	1	11	High
2024-MontebelloV-09	Develop Public Awareness Program	1	1	1	0	0	0	1	1	0	1	1	1	1	1	10	Medium
2024-MontebelloV-10	Review and Update Village Codes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	High
2024-MontebelloV-11	Flood Damage Prevention Ordinance Update, FEMA Regulations	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	High
2024-MontebelloV-12	Certified Floodplain Managers	1	1	1	1	1	1	0	0	1	1	1	1	1	1	12	High

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Other Community Objectives	Total	High / Medium / Low
2024-MontebelloV-13	Community Rating System	1	1	1	1	1	1	0	0	1	1	1	1	1	1	12	High
2024-MontebelloV-14	Critical Facilities in Floodplain	1	1	1	0	0	1	0	1	1	1	1	1	1	1	11	High
2024-MontebelloV-15	Outreach to Dam Owners	1	1	1	0	0	1	1	1	0	1	1	1	1	1	11	High

Note: Volume I, Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14).

Action 2024-MontebelloV-01. Hazard Mitigation Partnership

Action Name:	2024- MontebelloV-01		
Description of the Problem:	The Village does not have intermunicipal agreements set up with neighboring municipalities to help handle dam/levee failure, disease outbreak, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, and wildfire.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire	
Description of the Solution:	The Village will develop partnership with neighboring villages and towns to coordinate efforts related to hazard mitigation.		
Lead Agency:	Village		
Supporting Agencies:	Neighboring Towns and Villages		
Estimated Cost:	Low (< \$10,000)		
Potential Funding Sources:	Village Budget		
Implementation Timeline:	Short-term (< 5 years)		
Goals Met:	1, 2, 3, 4, 5, 6, 7		
Benefits:	The Village will have additional help during hazard events.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	This action will benefit socially vulnerable populations not just in the Village, but in surrounding areas as well through increased planning coordination.		
Impact on Critical Facilities/Lifelines:	This action will strengthen many of the critical lifelines which cover and service several municipalities and communities.		
Impact on Capabilities	This action will add to the Village capabilities by including outside resources and assistance during a hazard event.		
Impact on Future Development:	N/A		
Climate Change Considerations:	Climate change is resulting an increase in frequency and intensity of precipitation events, making flooding more common and severe.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	Do nothing.		Problem persists.

	Rely only on Village resources.	Costly, limited resources and capabilities.
	Coordinate with County and State.	Costly, long time scale.

Action 2024-MontebelloV-02. Hazard Drills

Action Name:	2024-MontebelloV-0	
Description of the Problem:	Schools that are located in the Village currently do not have any hazard drill systems in place. Schools need to implement drills for dam/levee failure, earthquakes, flooding, landslides, severe storms, severe winter storms, and wildfire.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	The Village will establish hazard drills each semester in all village schools.	
Lead Agency:	School District	
Supporting Agencies:	N/A	
Estimated Cost:	Low (< \$10,000)	
Potential Funding Sources:	Grant funding where available.	
Implementation Timeline:	Short Term (< 5yrs.)	
Goals Met:	1, 2, 3, 4, 5, 6, 7	
Benefits:	The Village schools will have hazard drill systems in place.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	N/A	
Impact on Critical Facilities/Lifelines:	N/A	
Impact on Capabilities	This action will enhance school capabilities to respond to hazard events safely and fast, providing protection to students.	
Impact on Future Development:	N/A	
Climate Change Considerations:	Climate change is resulting in an increase in intensity and frequency of precipitation events.	

Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	Do nothing.		Student safety at risk.
	Implement hazard response outreach to teachers.		Students may not know proper action during response to hazard events.
	Conduct drills once a year.		New students who start mid-year/semester may not know proper response protocol.

Action 2024-MontebelloV-03. Back-Up Power for Critical Facilities

Action Name:	2024-MontebelloV-0		
Description of the Problem:	Some critical facilities in the Village lack backup power and cannot perform daily functions during outages. Some critical facilities operate as shelters, emergency operation centers and PPE distribution centers for dam/levee failure, disease outbreak, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, and wildfire.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire	
Description of the Solution:	The Village will provide backup power for all critical public facilities (sewer pump station and other critical public buildings) so that they can all operate during power outages.		
Lead Agency:	Town of Ramapo Public Works		
Supporting Agencies:	N/A		
Estimated Cost:	Medium (\$10,000 to \$100,000)		
Potential Funding Sources:	Grant funding where available		
Implementation Timeline:	Short Term (<5 yrs.)		
Goals Met:	1, 2, 3, 4, 5, 6, 7		
Benefits:	The Village critical facilities will be able to perform continuity of operations during outages.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	

CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Protection of critical facilities provides an opportunity for first responders, utility workers, and emergency managers to stage and deploy resources to vulnerable and hazard prone areas.	
Impact on Critical Facilities/Lifelines:	This action protects public health and safety and ensures continued operation of a critical facility and its essential functions during a power outage.	
Impact on Capabilities	This action ensures continuity of operations to maintain capabilities.	
Impact on Future Development:	This action results in protection of a critical facility that could support future development.	
Climate Change Considerations:	Climate change is likely to increase severe weather events such as flooding, wind, and extreme temperatures that result in power failures. This action accounts for a likely increase in power failure events.	
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium
Alternatives	Action	Evaluation
	No action.	Problem continues.
	Install solar panels.	Weather dependent.
	Install wind turbines.	Weather dependent, costly.

Action 2024-MontebelloV-04. Comprehensive Plan Update

Action Name:	2024-MontebelloV-04 (prev. V. Montebello-6)	
Description of the Problem:	The current comprehensive plan does not incorporate natural disaster mitigation techniques for dam/levee failure, disease outbreak, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, and wildfire	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	The comprehensive plan update committee will work to update the comprehensive plan and ensure that natural disaster mitigation techniques are incorporated.	
Lead Agency:	Village, Rockland County Planning	
Supporting Agencies:	Comprehensive Plan Update Committee	
Estimated Cost:	Low (< \$10,000)	

Potential Funding Sources:	Municipal Budget		
Implementation Timeline:	Short Term (<5 yrs.)		
Goals Met:	1, 2, 5, 7		
Benefits:	The Village will be better prepared to handle hazard events.		
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	Natural disasters affect everyone in the community, and an outdated comprehensive plan would leave socially vulnerable populations at risk to natural disaster events,		
Impact on Critical Facilities/Lifelines:	Updating the comprehensive plan to include natural disasters will help critical facilities and lifelines be more resilient to impacts and can continue to function properly for the wellbeing of the community.		
Impact on Capabilities	The comprehensive plan update will help strengthen the local capabilities of the emergency response departments and staff to know what to do during a natural disaster event.		
Impact on Future Development:	An updated comprehensive plan will help plan for future development in being more resilient to natural disaster events.		
Climate Change Considerations:	The updated comprehensive plan will take into account climate change impacts when looking at ways to mitigate natural disaster events. This will limit climate change impacts on the community.		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	Do nothing.		Comprehensive plan will be outdated, and the community will not be prepared for natural disasters.
	Update the Comprehensive Plan without adding natural disasters.		Costly, community will not be prepared for natural disasters.
	Start over for the entire Comprehensive Plan.		Costly, long timeline.

Action 2024-MontebelloV-05. Update GIS Mapping

Action Name:	2024-MontebelloV-05		
Description of the Problem:	The Village does not have access to updated GIS datasets, nor do they have updated maps for the Village that help showcase risks from dam/levee failure, disease outbreak, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, and wildfire.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire	

Description of the Solution:	The Village will work with the Stormwater Consortium of Rockland County to update GIS mapping for the Village.		
Lead Agency:	Village Trustee		
Supporting Agencies:	N/A		
Estimated Cost:	Low (< \$10,000)		
Potential Funding Sources:	Municipal Budget		
Implementation Timeline:	Short Term (<5 yrs.)		
Goals Met:	1, 2, 3, 5		
Benefits:	This action allows the Village to have updated maps for hazards or concerns.		
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR)	<input type="checkbox"/> Natural Systems Protection (NSP)	
	<input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR)	<input type="checkbox"/> Natural Resource Protection (NR)	
	<input type="checkbox"/> Property Protection (PP)	<input type="checkbox"/> Structural Flood Control Projects (SP)	
	<input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	This action would inform areas most at risk to hazard events, such as flooding, that may also coincide with socially vulnerable populations.		
Impact on Critical Facilities/Lifelines:	This action would inform areas most at risk to hazard events, such as flooding, that may also include critical facilities and lifelines.		
Impact on Capabilities	This action would increase the capabilities and knowledge on a local level.		
Impact on Future Development:	This action would inform and influence future development practices.		
Climate Change Considerations:	This action would use climate change considerations and projections when mapping for hazards, such as flooding and sea level rise.		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	Do nothing.		Problem continues.
	Conduct GIS mapping internally.		Costly, long timeline, at risk for inaccuracy/not enough data.
	Use State GIS maps.		May not be locally accurate.

Action 2024-MontebelloV-06. Public Workshops

Action Name:	2024-MontebelloV-06
Description of the Problem:	Current zoning and planning ordinances and codes do not incorporate natural hazards and hazard mitigation, including the hazards of concern which are dam/levee failure, disease outbreak, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, and wildfire.

Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	The Village will hold periodic workshops regarding zoning and planning issues that arise regarding natural hazards and hazard mitigation inclusion in codes and ordinances.	
Lead Agency:	Village	
Supporting Agencies:	N/A	
Estimated Cost:	Low (< \$10,000)	
Potential Funding Sources:	Municipal Budget	
Implementation Timeline:	Short Term (<5 yrs.)	
Goals Met:	1, 2, 3, 5, 7	
Benefits:	This action strengthens the Village’s codes and ordinances.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	This action would benefit the socially vulnerable by providing them information to make informed decisions about natural disaster events, and where to seek shelter and resources.	
Impact on Critical Facilities/Lifelines:	N/A	
Impact on Capabilities	This action would benefit the planning department capabilities and outreach to the public.	
Impact on Future Development:	This action would influence future development decisions made by the community and planning department.	
Climate Change Considerations:	This action would supply residents with current climate change data to make informed decisions for the future.	
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium
		<input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No action.	Problem continues.
	Send out public flyers and social media posts.	Possibility that not everyone has access to the materials and information.
	Rely on state outreach efforts.	Not locally specific.

Action 2024-MontebelloV-07. Floodplain Management Best Practices

Action Name:	2024-MontebelloV-07 (prev. v. Montebello-9)	
Description of the Problem:	Floodplain management practices are not being closely monitored and followed which means properties located within the floodplain are more at risk.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Village will implement and follow best management practices for floodplain areas.	
Lead Agency:	Village Planning	
Supporting Agencies:	N/A	
Estimated Cost:	Low (< \$10,000)	
Potential Funding Sources:	Municipal Budget	
Implementation Timeline:	Short Term (<5 yrs.)	
Goals Met:	1, 2, 5, 7	
Benefits:	Floodplain management will be improved within the Village practices.	
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	This action protects socially vulnerable populations located in the floodplain.	
Impact on Critical Facilities/Lifelines:	This action protects critical facilities and lifelines located in the floodplain.	
Impact on Capabilities	This action enhances the floodplain management capabilities and the certified floodplain manager/emergency manager.	
Impact on Future Development:	This action influences future development planning for the Village.	
Climate Change Considerations:	This action takes climate change projections into consideration when assessing floodplain management best practices.	
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives	Action	Evaluation
	Do nothing.	Old floodplain management best practices may have negative effect, costly.
	Not utilize floodplain management best practices.	Properties will not be mitigated in the floodplain.

	Rely on state best practices.	Localized information may not be available.
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Action 2024-MontebelloV-08. Critical Facility Protection Measures

Action Name:	2024-MontebelloV-08 (prev. V. Montebello-12)	
Description of the Problem:	There are some critical facilities in the Village that were built before code updates were in place that aim to reduce damage from earthquakes, floods, severe storms, severe winter storms, or wildfires; therefore, they may be more susceptible to damage from a hazard event.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	The Village will work with the Town of Ramapo and adjacent villages (Airmont and Suffern) to determine the year built and level of protection for critical emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide some degree of protection from natural hazards and pursue potential mitigation opportunities to protect these sites as funding becomes available.	
Lead Agency:	Village Trustee	
Supporting Agencies:	Town of Ramapo	
Estimated Cost:	Low (< \$10,000)	
Potential Funding Sources:	Municipal Budget	
Implementation Timeline:	Short Term (<5 yrs.)	
Goals Met:	1, 2, 5, 7	
Benefits:	This action will improve critical facility vulnerabilities.	
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Protection of critical facilities provides an opportunity for first responders and emergency managers to maintain critical services that socially vulnerable populations rely on.	
Impact on Critical Facilities/Lifelines:	This action mitigates and protects all critical facilities and lifelines within the Village.	
Impact on Capabilities	This action improves continuity of operations during a flood event, allows for a more rapid return to pre-disaster capabilities after a flood event, and faster deployment of post disaster capabilities.	

Impact on Future Development:	The risk of significant damage occurring to the structure will be reduced, which will allow critical operations to be maintained or only briefly interrupted in severe events. This provides continued support to both current and future development in the service area.		
Climate Change Considerations:	This action addresses anticipated increases in flooding frequency and severity through protection to the 500-year (0.2-percent annual chance) flood level.		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input type="checkbox"/> Medium	<input checked="" type="checkbox"/> Low
Alternatives	Action		Evaluation
	Do nothing.		Problem continues.
	Relocate facilities.		Not possible.
	Conduct mitigation measures internally.		Costly, lack of resources and knowledge.

Action 2024-MontebelloV-09. Develop Public Awareness Program

Action Name:	2024-MontebelloV-09 (prev. V. Montebello-14)	
Description of the Problem:	The Village currently does not have a comprehensive education and outreach program and residents are not fully knowledgeable about storm preparation, response, and recovery for dam/levee failure, disease outbreak, droughts, earthquakes, extreme temperatures, flood, landslide, severe storm, severe winter storm, and wildfire.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	The Village will develop and enhance the public awareness program on hazards, prevention, and mitigation and will continue to work with Rockland County on their program that provides information to the municipalities.	
Lead Agency:	Village, Rockland County	
Supporting Agencies:	N/A	
Estimated Cost:	Low (< \$10,000)	
Potential Funding Sources:	Municipal Budget	
Implementation Timeline:	Short Term (<5 yrs.)	
Goals Met:	1, 2, 3, 5, 7	
Benefits:	This allows for the Village residents to be more knowledgeable about the hazards of concern.	

Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	This action would benefit the socially vulnerable by providing them information to make informed decisions about natural disaster events, and where to seek shelter and resources.	
Impact on Critical Facilities/Lifelines:	N/A	
Impact on Capabilities	This action would allow the local department staff the availability to be able to assist local residents.	
Impact on Future Development:	This action may inform residents on problem areas and could influence decisions on where to build new development and growth.	
Climate Change Considerations:	This action would supply residents with current climate change data to make informed decisions for the future.	
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium
Alternatives	Action	Evaluation
	No action.	Problem continues.
	Encourage residents to educate themselves.	Residents may not be aware of where to access information.
	Ask non-profits to conduct outreach.	Non-profits may be unable or unwilling to provide outreach.

Action 2024-MontebelloV-10. Review and Update Village Codes

Action Name:	2024-MontebelloV-10 (prev. V. Montebello-15)	
Description of the Problem:	The Village has some facilities that were built before code updates; therefore, they may be more susceptible to damage from a hazard events such as dam/levee failure, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, and wildfire	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	The Village will perform a code update and will review existing local codes and ordinances against the identified hazards to determine whether there needs to be any amendments to address identified hazards and, where a need is identified; modify/amend the codes/ordinances as applicable.	
Lead Agency:	Village	
Supporting Agencies:	Facility Owners	

Estimated Cost:	Low (< \$10,000)		
Potential Funding Sources:	Municipal Budget		
Implementation Timeline:	Short Term (<5 yrs.)		
Goals Met:	1, 2, 3, 5, 7		
Benefits:	Facilities in the Village will be better protected.		
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR)	<input type="checkbox"/> Natural Systems Protection (NSP)	
	<input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR)	<input type="checkbox"/> Natural Resource Protection (NR)	
	<input type="checkbox"/> Property Protection (PP)	<input type="checkbox"/> Structural Flood Control Projects (SP)	
	<input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	N/A		
Impact on Critical Facilities/Lifelines:	Updating the Village code to include hazard mitigation practices will help critical facilities and lifelines be more resilient to impacts and can continue to function properly for the wellbeing of the community.		
Impact on Capabilities	This action improves Village capabilities to strengthen facilities from hazard events.		
Impact on Future Development:	An updated Village code will help plan for future development in being more resilient to natural disaster and other hazard events.		
Climate Change Considerations:	The updated Village code will consider climate change impacts when looking at ways to mitigate natural disaster events. This will limit climate change impacts on the community.		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	Do nothing.		Problem continues.
	Amend Village code to not include hazard mitigation.		Problem continues.
	Amend Village code without considering all hazards and climate change projections.		Buildings and critical facilities may not be protected against future disasters.

Action 2024-MontebelloV-11. Flood Damage Prevention Ordinance Update, FEMA Regulations

Action Name:	2024-MontebelloV-11 (prev. V. Montebello-17)
Description of the Problem:	The Floodplain Damage Prevention Ordinance was last updated in 2014 and is need of an update to match the current requirements and will also need to be updated during the review and implementation of new FIRMs.

Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Village will update/revise floodplain management ordinance to comply with latest FEMA regulations and will ensure the ordinance is updated when the Village receives new Firms..	
Lead Agency:	Village	
Supporting Agencies:	Floodplain Administrator	
Estimated Cost:	Low (< \$10,000)	
Potential Funding Sources:	Municipal Budget	
Implementation Timeline:	Short Term (<5 yrs.)	
Goals Met:	1, 2, 3, 7	
Benefits:	This action will strengthen the floodplain management for the Village.	
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	N/A	
Impact on Critical Facilities/Lifelines:	Complying with the latest FEMA regulations will ensure that the critical facilities and lifelines in the floodplain are protected and can remain functioning during emergency events.	
Impact on Capabilities	Updating the Flood Damage Prevention Ordinance increases first responders' capabilities by ensuring roadways and facilities in the floodplain are fully operational.	
Impact on Future Development:	Complying with the latest FEMA regulations will help to guide safe future development in the floodplain area, and limit unsafe structures in the floodplain.	
Climate Change Considerations:	FEMA regulations consider climate change projections and updating the Flood Damage Prevention Ordinance will ensure the Village is incorporating climate change considerations when mitigating future disaster events.	
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium
		<input type="checkbox"/> Low
Alternatives	Action	Evaluation
	Do nothing.	Problem continues.
	Update Flood Damage Prevention Ordinance without looking at latest FEMA regulations	Costly, not in compliance, structures may not be protected.
	Rely on state regulations.	Structures may not be fully protected from flood events.

Action 2024-MontebelloV-12. Certified Floodplain Managers

Action Name:	2024-MontebelloV-13 (prev. V. Montebello-19)		
Description of the Problem:	Floodplain management and ordinance enforcement staff are not Certified Floodplain Managers.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The Village will require staff involved in floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs).		
Lead Agency:	Village		
Supporting Agencies:	Floodplain Administrators		
Estimated Cost:	Low (< \$10,000)		
Potential Funding Sources:	Municipal Budget		
Implementation Timeline:	Short Term (<5 yrs.)		
Goals Met:	1, 2, 3, 7		
Benefits:	This action will improve the Village floodplain management staff.		
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	N/A		
Impact on Critical Facilities/Lifelines:	N/A		
Impact on Capabilities	This action would add to the capabilities of the local staff to have knowledge on floodplain management and resilience.		
Impact on Future Development:	This action would allow local staff to have knowledge on floodplain management and resilience when planning for future development.		
Climate Change Considerations:	This action would take into account current climate change data for local staff to be informed when making planning considerations.		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low

Alternatives	Action	Evaluation
	Do nothing.	The problem would persist.
	Rely on state floodplain management.	The state may not have the capability to provide this service.
	Rely on federal floodplain management.	The federal government may not have the capability to provide this service.

Action 2024-MontebelloV-13. Community Rating System

Action Name:	2024-MontebelloV-14 (prev. V. Montebello-20)	
Description of the Problem:	The Village is currently not in the CRS program to reduce flood insurance premiums.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Village will evaluate the benefits of joining the Community Rating System (CRS) Program.	
Lead Agency:	Village Planning	
Supporting Agencies:	Floodplain Administrators	
Estimated Cost:	Low (< \$10,000)	
Potential Funding Sources:	Municipal Budget	
Implementation Timeline:	Short Term (<5 yrs.)	
Goals Met:	1, 2, 3, 7	
Benefits:	The Village will have reduced flood insurance premiums.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	The CRS program contains actions and elements that include outreach to socially vulnerable populations. Participating as a CRS community will allow flood insurance discounts and premiums for residents.	
Impact on Critical Facilities/Lifelines:	The CRS program requires flood mapping and other elements which take include locations of critical facilities and lifelines.	
Impact on Capabilities	Participating as a CRS community allows for the Village to receive funding, assistance, and resources from FEMA.	

Impact on Future Development:	The CRS program has actions and elements which can assist with planning for sustainable future development.		
Climate Change Considerations:	The CRS program incorporates climate change considerations and projections and by participating the Village will be more resilient to climate change impacts.		
Priority: Check one	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	Do nothing.		Will not qualify for discounts on flood insurance and FEMA resources.
	Rely on state resources.		Will not be a participating community in CRS.
	Participate as a class 10 community.		Will not be considered a participating community in CRS.

Action 2024-MontebelloV-14. Critical Facilities in Floodplain

Action Name:	2024-MontebelloV-15 (prev. V. Montebello-21)		
Description of the Problem:	Three pump stations are located in the floodplain and are potentially vulnerable to flood events. Critical facilities located in the floodplain are not only susceptible to flood damage but also create unnecessary complications for the municipality during an emergency event and during post-disaster recovery.		
Hazard(s) of Concern: Check all that apply	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The Village does not have jurisdiction over these facilities to mitigate; they are privately owned by SUEZ. The Village will notify and provide needed support to their facility manager/operator and FEMA grant funding support to determine what mitigation options are needed. The Village will also assist with NYS requirements to mitigate to the 500-year flood event or “worst damage scenario”.		
Lead Agency:	SUEZ-Private Property Owner and Village support		
Supporting Agencies:	Village Administration		
Estimated Cost:	Low (< \$10,000)		
Potential Funding Sources:	Municipal Budget		
Implementation Timeline:	Short Term (<5 yrs.)		
Goals Met:	1, 2, 4, 6		
Benefits:	High (> \$100,000)		
Mitigation Action Type: Check all that apply	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	

CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	This action ensures the pump stations are fully operational to protect all residents, including those socially vulnerable, from flood impacts.	
Impact on Critical Facilities/Lifelines:	This action ensures that the pump stations that are not Village-owned are protected from severe flooding events.	
Impact on Capabilities	This action ensures that critical facilities in the floodplain are fully operational during an emergency event.	
Impact on Future Development:	N/A	
Climate Change Considerations:	This action takes into account climate change considerations, as climate change projections show an increase in severe flood events.	
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium
Alternatives	Action	Evaluation
	Do nothing.	Problem persists.
	Mitigate without NYS requirements.	Critical facilities will not be protected, not in compliance.
	Not utilize federal funding opportunities.	Costly, limited resources.

Action 2024-MontebelloV-15. Outreach to Dam Owners

Action Name:	2024-MontebelloV-16	
Description of the Problem:	<p>The following dams are exposed to the 1 percent and 0.2 percent flood event which may result in dam failure:</p> <ul style="list-style-type: none"> • Ramapo Pond Dam • Schwartz Estate Pond Dam 1 • Schwartz Estate Pond Dam 7 • Schwartz Estate Pond Dam 2 • Schwartz Estate Pond Dam 3 • Schwartz Estate Pond Dam 4 • Schwartz Estate Pond Dam 5 • Schwartz Estate Pond Dam 6 • Schwartz Estate Pond Dam A • Schwartz Pond Dam • Sichel Dam No 2 <p>The Village does not have jurisdiction over these dams.</p>	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Village will conduct outreach to provide resources and materials help dam owners select actions to mitigate dam failure and over topping.	
Lead Agency:	Village	

Supporting Agencies:	N/A	
Estimated Cost:	Low (< \$10,000)	
Potential Funding Sources:	Municipal Budget	
Implementation Timeline:	Short Term (<5 yrs.)	
Goals Met:	1, 2, 4, 6	
Benefits:	High (> \$100,000)	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	These dams may protect socially vulnerable populations from severe flooding events. Protecting and mitigating these dams will ensure they are fully operational in protecting vulnerable populations.	
Impact on Critical Facilities/Lifelines:	These dams are critical facilities and educating dam owners on mitigation and safety will ensure they are fully operational.	
Impact on Capabilities	N/A	
Impact on Future Development:	N/A	
Climate Change Considerations:	Climate change considerations and projections will be incorporated into the outreach to educate dam owners on proper mitigation techniques.	
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives	Action	Evaluation
	Do nothing.	Problem persists, potential for dam failure.
	Tell dam owners what projects to implement.	No public buy-in, not locally specific to the needs of community.
	Implement mitigation measures around dams.	Costly, may not fully protect/maintain actual dam.

SECTION 9. JURISDICTIONAL ANNEXES

9.11 VILLAGE OF NEW HEMPSTEAD

This jurisdictional annex to the Rockland County Hazard Mitigation Plan (HMP) provides information to assist public and private sectors in the Village of New Hempstead with reducing losses from future hazard events. This annex is not guidance of what to do when a disaster occurs; its focus is on actions that can be implemented prior to a disaster to reduce or eliminate damage to property and people. The annex presents a general overview of the Village of New Hempstead, describes who participated in the planning process, assesses the Village’s risk, vulnerability, and capabilities, and outlines a strategy for achieving a more resilient community.

9.11.1 Hazard Mitigation Planning Team

The Village of New Hempstead identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Village departments. The Mayor represented the community on the Rockland County HMP Planning Partnership and Steering Committee and supported the local planning process requirements by securing input from persons with specific knowledge to enhance the plan. All departments were asked to contribute to the annex development through reviewing and contributing to the capability assessment, reporting on the status of previously identified actions, and participating in action identification and prioritization.

Table 9.11-1 summarizes Village officials who participated in the development of the annex and in what capacity. Additional documentation of the Village’s planning activities through Planning Partnership meetings is included in Volume I.

Table 9.11-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Abe Sicker, Mayor Address: 108 Old Schoolhouse Road, New City, NY 10956 Phone Number: 845-354-8100 Email: mayor@newhempstead.org	Name/Title: Carole Vasquez, Village Clerk Address: 108 Old Schoolhouse Road, New City, NY 10956 Phone Number: 845-354-8100 Email: cvasquez@newhempstead.org
National Flood Insurance Program Floodplain Administrator	
Name/Title: Glen McCreedy, P.E., Village Engineer Address: 108 Old Schoolhouse Road, New City, NY 10956 Phone Number: 845-357-4411 Email:	

9.11.2 Municipal Profile

The Village of New Hempstead is located in the Town of Ramapo in Rockland County. It is bordered to the north by the Village of Wesley Hills, to the south by the Village of Spring Valley, to the east by the Village of New Square, and to the west by the Town of Ramapo. The Village has a total area of 2.8 square miles with 0.35 percent being water. The Village is located within the East Ramapo School District and contains many historical landmarks such as the Brick Church (founded in 1774) and the English Meeting House which hold cultural significance to the community.

Research has shown that some populations are at greater risk from hazard events because of decreased resources or physical abilities. These populations can be more susceptible to hazard events based on a number of factors including their physical and financial ability to react or respond during a hazard, and the location and construction quality of their housing. Data from the 2017-2021 American Community Survey indicates that 4.8 percent of the population is 5 years of age or younger, 15 percent is 65 years of age or older, 1.2 percent is non-English speaking, 2.2 percent is below the poverty threshold, and 7 percent is considered disabled.

9.11.3 Jurisdictional Capability Assessment and Integration

The Village of New Hempstead performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Volume I describes the components included in the capability assessment and their significance for hazard mitigation planning. The jurisdictional assessment for this annex includes analyses of the following:

- Planning and regulatory capabilities
- Development and permitting capabilities
- Administrative and technical capabilities
- Fiscal capabilities
- Education and outreach capabilities
- Classification under various community mitigation programs
- Adaptive capacity to withstand hazard events

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into day-to-day local government operations. As part of the hazard mitigation analysis, planning and /policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress toward plan integration. Development of an updated mitigation strategy provided an opportunity for the Village of New Hempstead to identify opportunities for integration of mitigation concepts that can be incorporated into municipal procedures.

Planning, Legal, and Regulatory Capability and Integration

Table 9.11-2 summarizes the regulatory tools that are available to New Hempstead.

Table 9.11-2. Planning, Legal, and Regulatory Capability and Integration

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Codes, Ordinances, & Regulations				
Building Code	Yes	Chapter 290, 1984	State and Local	Code Enforcer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Village Building Code sets minimum requirements for design and construction of infrastructure systems.				
Zoning/Land Use Code	Yes	Chapter 290, 1984	Local	Code Enforcer and Zoning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Village Zoning and Land Use Code regulates the use of land and buildings to promote sustainable development practices.				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Subdivision Code	Yes	Chapter 255, 1984	Local	Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Subdivision Code is responsible for regulating new neighborhoods and easements within the Village.				
Site Plan Code	Yes	Chapter 290, Article IX, 1984	Local	Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Site Plan Code establishes community design regulations for the Village.				
Stormwater Management Code	Yes	Chapter 245, 2005	Local	Stormwater Management Officer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Stormwater Management Code regulates stormwater runoff and stormwater management infrastructure and systems within the Village.				
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Real Estate Disclosure	Yes	New York State (NYS) mandate, Property Condition Disclosure Act, NY Code – Article 14 §460-467	State and Local	NYS Department of State
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> In addition to facing potential liability for failing to disclose under the exceptions to “caveat emptor,” a home seller must make certain disclosures under the law or pay a credit of \$500 to the buyer at closing. While the PCDA requires a seller to complete a standardized disclosure statement and deliver it to the buyer before the buyer signs the final purchase contract, in practice, most home sellers in New York opt not to complete the statement and instead pay the credit.				
Growth Management	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Environmental Protection Ordinance(s)	No			
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Flood Damage Prevention Ordinance	Yes	Chapter 154, 2014	Federal, State, Local	Village Engineer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The FDPO promotes the public health, safety and general welfare and to minimize public and private losses due to flood conditions in specific areas.				
Wellhead Protection	No			
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Emergency Management Ordinance	No			
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Climate Change Ordinance	No			
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Other: Freeboard	Yes	State mandated BFE+2 for single and two-family residential construction, BFE+1 for all other construction types	State and Local	Building Inspector
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Village requires that all new construction or substantial improvements of structures in the SFHA must have the lowest floor elevated to or above the base flood elevation. This meetings the State’s mandated BFE +2 feet.				
Other: Municipal Separate Storm Sewer System (MS4)	Yes	Chapter 9D, Illicit Discharges, Activities and Connections to Storm Sewers (3/18/2008)	Local	Village Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Chapter 9D regulates non-stormwater discharges to the municipal separate storm sewer system to the maximum extent practicable as required by federal and state law. Chapter 9D establishes methods for controlling the introduction of pollutants into the municipal separate storm sewer system in compliance with requirements of the State Pollutants Discharge Elimination System General Permit for municipal separate storm sewer systems.				
Planning Documents				
General/Comprehensive Plan	Yes	Comprehensive Plan	Local	Mayor and Village Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Comprehensive Plan is responsible for guiding future development planning efforts within the Village.				
Capital Improvement Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
Disaster Debris Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Floodplain Management or Watershed Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Stormwater Management Plan	Yes	Stormwater Consortium	Local	Village Engineer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Village participates in a stormwater consortium which outlines stormwater management strategies in the Village.				
Open Space Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Urban Water Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Habitat Conservation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Economic Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Community Wildfire Protection Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Community Forest Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Transportation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Agriculture Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Climate Action/ Resiliency/Sustainability Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Tourism Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Business/ Downtown Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other (for example NYRCR, etc.)	-	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Response/Recovery Planning				
Comprehensive Emergency Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Continuity of Operations Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Substantial Damage Response Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Post-Disaster Recovery Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Public Health Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other	N/A	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

Development and Permitting Capability

Table 9.11-3 summarizes the capabilities of New Hempstead to oversee and track development.

Table 9.11-3. Development and Permitting Capability

Indicate if your jurisdiction implements the following	Yes/No	Comment:
Do you issue development permits? <ul style="list-style-type: none"> If you issue development permits, what department is responsible? If you do not issue development permits, what is your process for tracking new development? 	Yes	The Building Department issues development permits and tracks new development.
Are permits tracked by hazard area? (For example, floodplain development permits.)	No	-
Do you have a buildable land inventory? <ul style="list-style-type: none"> If you have a buildable land inventory, please describe 	No	-
Describe the level of build-out in your jurisdiction.	N/A	The Village aims to practice sustainable planning and build-out.

Administrative and Technical Capability

Table 9.11-4 summarizes potential staff and personnel resources available to New Hempstead and their current responsibilities that contribute to hazard mitigation.

Table 9.11-4. Administrative and Technical Capabilities

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
<i>Administrative Capability</i>		
Planning Board	Yes	The Planning Board is appointed by the mayor subject to the approval of the board of trustees. Typically, the Planning Board consists of five members. The Board is responsible for reviewing proposed Development projects and making decisions on them in accordance with state statutes and local bylaws and regulations. The Planning Board is also charged with long-range planning for the Community, including creating and updating the Village’s Master Plan.

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
Zoning Board of Adjustment	Yes	The Zoning Board of Appeals is typically a five-person board appointed by the Village Board. The Zoning Board of Appeals has original jurisdiction over interpretation of the Zoning Ordinance of the Village of New Hempstead. The ZBA also hears appeals for variances of area and use. The Board of Appeals must act in strict accordance with the procedure as specified by law and by the Village of New Hempstead Zoning Ordinance.
Planning Department	No	-
Mitigation Planning Committee	No	-
Environmental Board/Commission	No	-
Open Space Board/Committee	No	-
Economic Development Commission/Committee	No	-
Public Works/Highway Department	No	-
Construction/Building/Code Enforcement Department	No	The Village has an agreement with the Town of Ramapo for these services.
Emergency Management/Public Safety Department	No	Emergency services are provided by Hillcrest Fire Department, Springhill Ambulance, and Ramapo Police Department.
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	Yes	Code Enforcer inspects all stormwater drains
Mutual aid agreements	Yes	Mutual aid agreements with the Town of Ramapo for the following services: Police, Highway, DPW, Building
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	No	-
Other	N/A	-
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Consultants (McLaren Engineering and Brooker Engineering)
Engineers or professionals trained in building or infrastructure construction practices	Yes	Glenn McCreedy, P.E., Village Engineer.
Planners or engineers with an understanding of natural hazards	Yes	Consultants (McLaren Engineering and Brooker Engineering)
Staff with expertise or training in benefit/cost analysis	Yes	Brooker Engineering (Consultant)
Professionals trained in conducting damage assessments	Yes	Only property owned by Village is Village Hall. The Village does not own any public land except right of ways. No damages assessments conducted on private property. Brooker Engineering can conduct damage assessments as needed.
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	Yes	Brooker Engineering (Consultant) and Village has access to County GIS portal
Environmental scientist familiar with natural hazards	Yes	Brooker Engineering (Consultant)
Surveyor(s)	Yes	Surveyors are hired as needed (Brooker Engineering)
Emergency Manager	Yes	The Village Mayor is the designated Emergency Manager and is responsible for emergency management decisions for the Village.

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
Grant writer(s)	Yes	Former Village Attorney – applied for technology and road grants <i>Consider the following:</i> Are data and maps from the HMP used to support documentation in grant applications?
Resilience Officer	No	-
Other (this could include stormwater engineer, environmental specialist, etc.)	N/A	-

Fiscal Capability

Table 9.11-5 summarizes financial resources available to New Hempstead.

Table 9.11-5. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use? (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	Yes
Capital improvements project funding	Yes, Municipal Budget Identifies improvement projects; CHIPS – NYSDOT program
Authority to levy taxes for specific purposes	Yes
User fees for water, sewer, gas or electric service	No
Impact fees for homebuyers or developers of new development/homes	Yes, Permit fees; Recreational Fee \$3200/lot
Stormwater utility fee	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	No
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	No
Other federal or state Funding Programs	No
Open Space Acquisition funding programs	No
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	N/A

Education and Outreach Capability

Table 9.11-6 summarizes the education and outreach resources available to New Hempstead.

Table 9.11-6. Education and Outreach Capabilities

Outreach Resources	Available? (Yes/No)	Comment:
Public information officer or communications office	No	-
Personnel skilled or trained in website development	No	-

Outreach Resources	Available? (Yes/No)	Comment:
Hazard mitigation information available on your website	Yes	The Village maintains a website has links to municipal news and events, village newsletter and email list, village calendar, the annual budget, county websites, and emergency services. Newsletters are posted on the website that provide residents further insight into the Village current events. Information regarding Indian Point Nuclear Facility is also distributed.
Social media for hazard mitigation education and outreach	No	-
Citizen boards or commissions that address issues related to hazard mitigation	No	-
Warning systems for hazard events	Yes	The County utilizes NY-Alert and CodeRed (the backup to NY-Alert) for emergency notifications (all Towns and Villages have access to it).
Natural disaster/safety programs in place for schools	No	-
Organizations that conduct outreach to socially vulnerable populations and underserved populations	No	-
Public outreach mechanisms / programs to inform citizens on natural hazards, risk, and ways to protect themselves during such events	Yes	N/A
If yes, please describe.	-	The Village maintains a website has links to municipal news and events, village newsletter and email list, village calendar, the annual budget, county websites, and emergency services. Newsletters are posted on the website that provide residents further insight into the Village current events. Information regarding Indian Point Nuclear Facility is also distributed.

Community Classifications

Table 9.11-7 summarizes classifications for community programs available to New Hempstead.

Table 9.11-7. Community Classifications

Program	Participating? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	No	-	-
New York State Department of Environmental Conservation (NYSDEC) Climate Smart Community	No	-	-
National Weather Service Storm Ready Certification	No	-	-
Firewise Communities classification	No	-	-
Other: Organizations with mitigation focus (advocacy group, non-government)	N/A	-	-

N/A = Not applicable
 — = Unavailable

Adaptive Capacity

Adaptive capacity is defined as “the ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or respond to consequences” (IPCC, 2022). Each jurisdiction has a unique combination of capabilities to adjust to, protect from, and withstand a future hazard event, future conditions, and changing risk. Table 9.11-8 summarizes the adaptive capacity for each identified hazard of concern and the Village’s capability to address related actions using the following classifications:

- Strong: Capacity exists and is in use.
- Moderate: Capacity might exist; but is not used or could use some improvement.
- Weak: Capacity does not exist or could use substantial improvement.

Table 9.11-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Disease Outbreak	Moderate
Drought	Moderate
Earthquake	Moderate
Extreme Temperature	Moderate
Flood	Moderate
Landslide	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

9.11.4 National Flood Insurance Program Compliance

This section provides specific information on the management and regulation of the regulatory floodplain, including current and future compliance with the National Flood Insurance Program (NFIP). The floodplain administrator listed in Table 9.11-1 is responsible for maintaining this information.

NFIP Summary

Table 9.11-9 summarizes the NFIP statistics for New Hempstead.

Table 9.11-9. Village of New Hempstead NFIP Summary of Policy and Claim Statistics

# Policies	9
# Claims (Losses)	6
Total Loss Payments	\$44,138
# Repetitive Loss Properties (NFIP definition)	0
# Repetitive Loss Properties (FMA definition)	1
# Severe Repetitive Loss Properties	0
# Policies Within the 1 percent Annual Chance Flood Boundary	0

NFIP Definition of Repetitive Loss: The NFIP defines a repetitive loss property as any insurable building for which two or more claims of more than \$1,000 were paid by the NFIP within any rolling 10-year period since 1978.

FMA Definition of Repetitive Loss: FEMA’s Flood Mitigation Assistance (FMA) program defines a repetitive loss property as any insurable building that has incurred flood-related damage on two occasions, in which the cost of the repair, on average, equaled or exceeded 25 percent of the market value of the structure at the time of each such flood event.

Definition of Severe Repetitive Loss: A residential property covered under an NFIP flood insurance policy and: (a) That has at least four NFIP claim payments over \$5,000 each, and the cumulative amount of such claims payments exceeds \$20,000; or (b) For which at least two separate claims payments have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building. At least two of the claims must have occurred within any 10-year period, more than 10 days apart.

Source: FEMA, December 2023

Note: RL count may include properties also identified as SRL.

Flood Vulnerability Summary

Table 9.11-10 provides a summary of the NFIP program in the Village of New Hempstead.

Table 9.11-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	New Hempstead Rd, Greenridge Way, Sandybrook, Pennington Way, Union Rd, Asher Dr. Brockton Rd. Summit Pk Rd. are all areas that flood within the Village.
Do you maintain a list of properties that have been damaged by flooding?	Yes
Do you maintain a list of property owners interested in flood mitigation?	No, not at this time.
How many homeowners and/or business owners are interested in mitigation (elevation or acquisition)?	None
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what projects are underway.	No, not at this time.
How do you make Substantial Damage determinations?	The Village determines substantial damage through inspections.
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	Unknown, at this time.
How many properties have been mitigated (elevation or acquisition) in your jurisdiction? • If there are mitigation properties, how were the projects funded?	Unknown, at this time.

NFIP Topic	Comments
Do your flood hazard maps adequately address the flood risk within your jurisdiction? <ul style="list-style-type: none"> If not, state why. 	Yes, the flood hazard maps address the flood risk within the Village.
NFIP Compliance	
What local department is responsible for floodplain management?	The Village Engineer.
Are any certified floodplain managers on staff in your jurisdiction?	No, the Village does not have certified floodplain managers on staff.
Do you have access to resources to determine possible future flooding conditions from climate change?	Yes, the Village has access to these resources.
Does your floodplain management staff need any assistance or training to support its floodplain management program? <ul style="list-style-type: none"> If so, what type of assistance/training is needed? 	None, at this time.
Provide an explanation of NFIP administration services you provide (e.g., permit review, GIS, education/outreach, inspections, engineering capability)	The Village provides permit reviews.
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	The Village has consultants who determine if structures qualify.
What are the barriers to running an effective NFIP program in the community, if any?	None, at this time.
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? <ul style="list-style-type: none"> If so, state the violations. 	None, at this time.
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	February 24, 2020
What is the local law number or municipal code of your flood damage prevention ordinance?	Chapter 154 of the Village Code, 2014.
What is the date that your flood damage prevention ordinance was last amended?	In 2014
Does your floodplain management program meet or exceed minimum requirements? <ul style="list-style-type: none"> If exceeds, in what ways? 	Yes, the floodplain management program meets the minimum requirements at this time.
Are there other local ordinances, plans or programs (e.g., site plan review) that support floodplain management and meeting the NFIP requirements? For instance, does the planning board or zoning board consider efforts to reduce flood risk when reviewing variances such as height restrictions?	Yes.
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	No, not at this time.

9.11.5 Growth/Development Trends

Understanding how past, current, and projected development patterns have or are likely to increase or decrease risk in hazard areas is a key component to appreciating a jurisdiction’s overall risk to its hazards of concern. Recent and expected future development trends, including major residential/commercial development and major infrastructure development, are summarized in Table 9.11-11 through Table 9.11-13.

Table 9.11-11. Number of Building Permits for New Construction Issued Since the Previous HMP

	New Construction Permits Issued			Total
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	
2019				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2020				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2021				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2022				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2023				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0

SFHA = Special Flood Hazard Area (1 percent flood event)

Table 9.11-12. Recent Major Development and Infrastructure from 2018 to Present

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
No major development and infrastructure reported.					

* Only location-specific hazard zones or vulnerabilities identified.

Table 9.11-13. Known or Anticipated Major Development and Infrastructure in the Next Five Years

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
No major development or infrastructure anticipated.					

* Only location-specific hazard zones or vulnerabilities identified.

9.11.6 Jurisdictional Risk Assessment

The hazard profiles in Volume I provide detailed information regarding each planning partner’s vulnerability to the identified hazards, including summaries of the Village of New Hempstead risk assessment results and data used to determine the hazard ranking. Key local risk assessment information is presented in the following sections.

Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Village are shown in Figure 9.11-1 and Figure 9.11-2. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps are provided only for hazards that can be identified clearly using mapping techniques and technologies and for which the Village of New Hempstead has significant exposure. The maps show the location of potential new development, where available.

Figure 9.11-1. Village of New Hempstead Flood and Dam Inundation Hazard Area Extent and Location

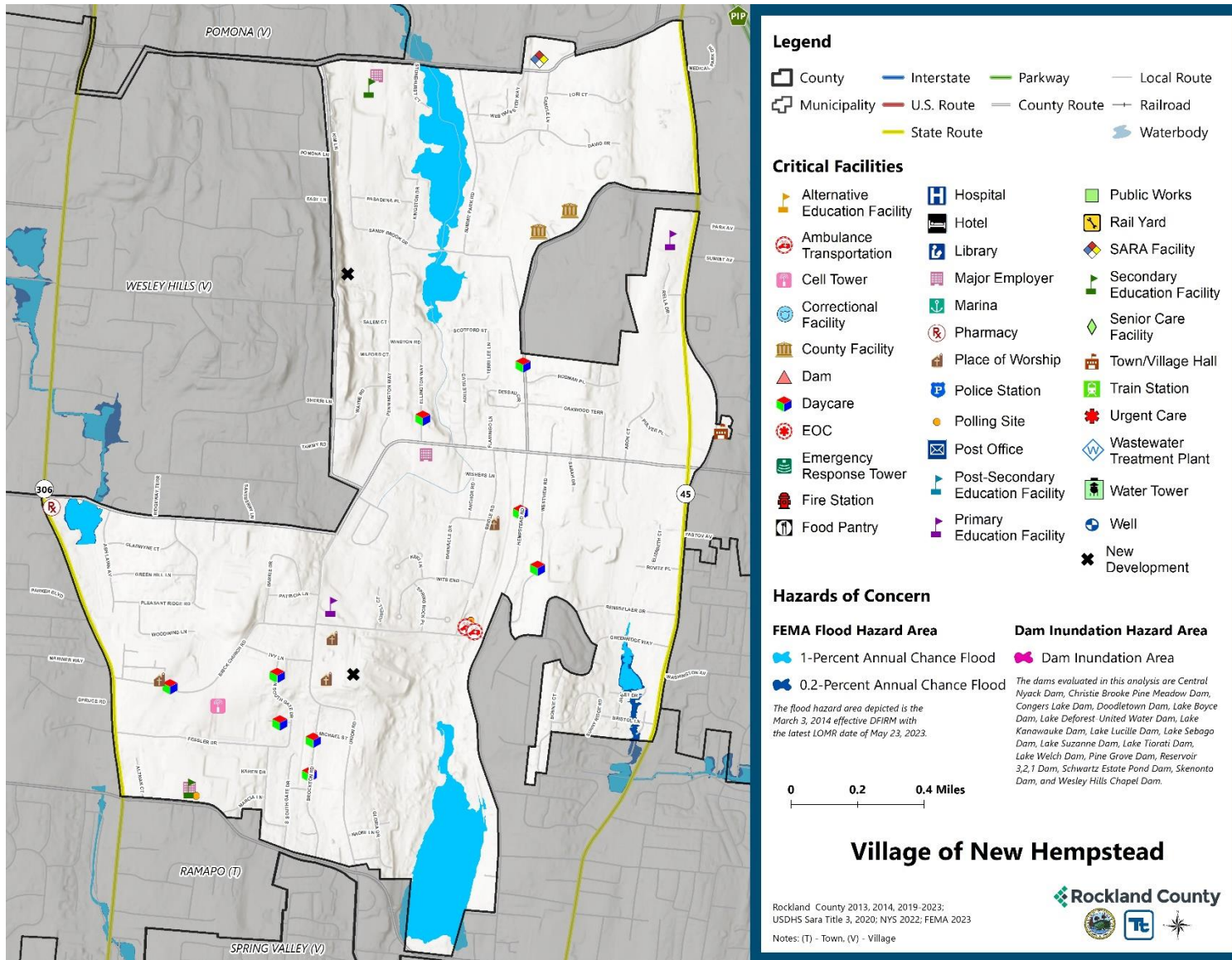
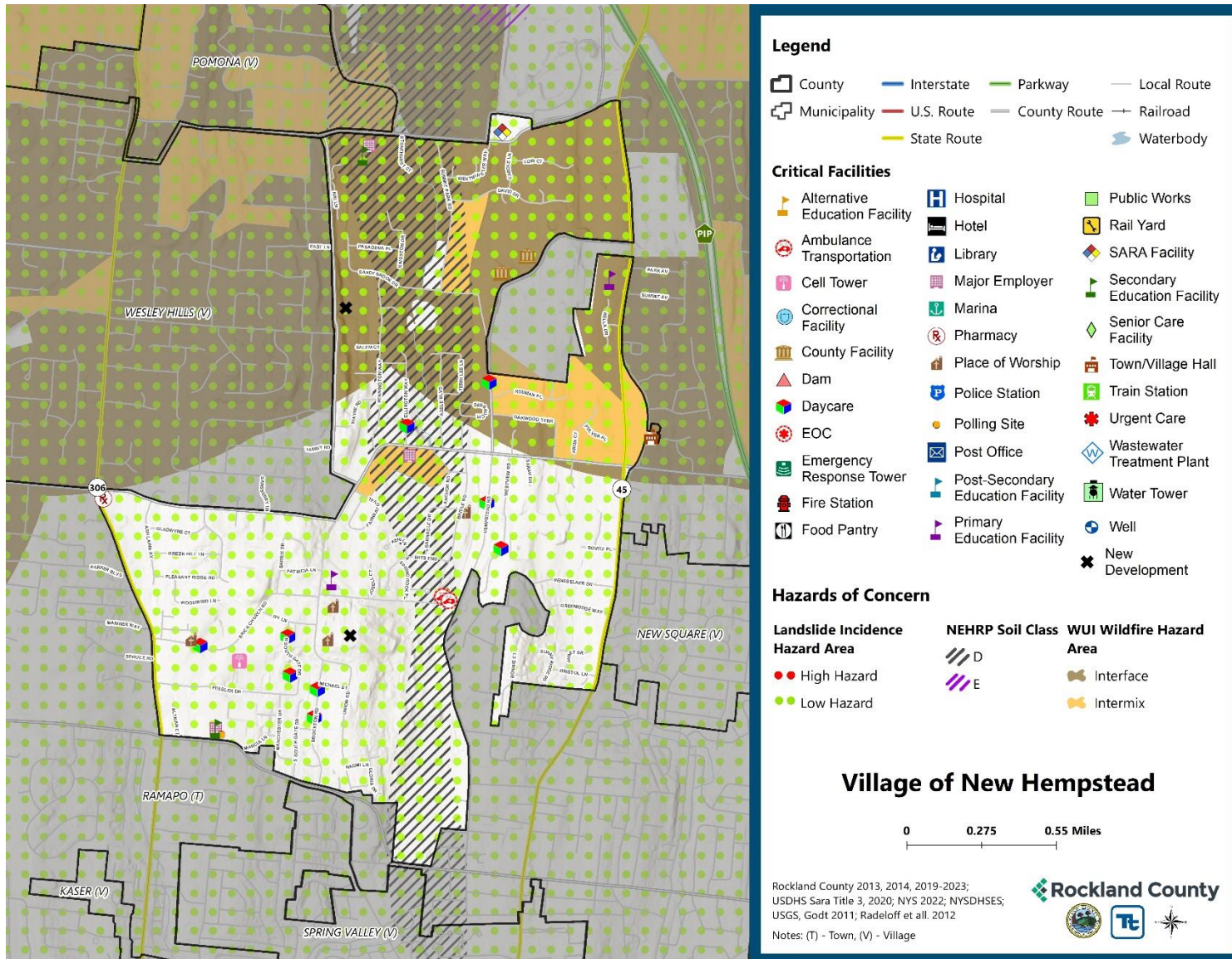


Figure 9.11-2. Village of New Hempstead Landslide, Earthquake, and Wildfire Hazard Area Extent and Location



Hazard Event History

The history of natural and non-natural hazard events in the Village of New Hempstead is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 9.11-14 provides details on loss and damage in the Village during hazard events since the last hazard mitigation plan update.

Table 9.11-14. Hazard Event History in the Village of New Hempstead

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Summary of Damage and Losses in the Village
Jan 20, 2020 - May 11, 2023	New York Covid-19 (3434-EM-NY, 4480-DR-NY)	Yes	The Covid-19 pandemic resulted in nationwide shutdowns, social distancing and masking requirements, and immunization efforts. Since the start of the pandemic, roughly 950 deaths have been reported in Rockland County. The federal Public Health Emergency expired in May 2023 but illness continues to occur as the virus shifts to becoming endemic.	The village was effected. Board members and residents have passed away and many residents were sick.
April 13, 2020	N/A	N/A	High winds across the county led to downed trees power outages, closed roads, and approximately \$200,000 in property damage.	Village contracts with Ramapo PD and Ramapo Highway to handle these impacts. all impacts were resolved.
August 4, 2020	New York Tropical Storm Isaias (4567-DR-NY)	Yes	The center of Isaias passed about 65 miles west of New York City at 3 pm on August 4, 2020. Tropical storm force winds extended well east of the center of circulation. In addition, 1 to 3 inches of rainfall, highest west, were recorded across the county. These types of winds and rainfall across the area resulted in numerous trees and tree limbs being downed, power outages, damages to homes and automobiles, and disruption to transit.	Village contracts with Ramapo PD and Ramapo Highway to handle these impacts. all impacts were resolved.
August 21-24, 2021	New York Hurricane Henri (3565-EM-NY)	Yes	Rainfall from Tropical Storm Henri resulted in widespread flash flooding across southeastern New York, particularly portions of the Lower Hudson Valley. Rainfall totals generally ranged from 2-5 inches, with this rain coming in addition to the 2-5 inches that fell during the predecessor rainfall event the night before.	Village contracts with Ramapo PD and Ramapo Highway to handle these impacts. all impacts were resolved.

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Summary of Damage and Losses in the Village
September 1-3, 2021	New York Remnants of Hurricane Ida (3572-EM-NY, 4615-DR-NY)	Yes	Extremely heavy rainfall associated with the remnants of Hurricane Ida overspread southeast New York during the evening of September 1 and continued through the early morning hours of September 2. Rainfall totals ranged from 5-8 inches across much of the region, with much of that rain falling in just a few hours. This resulted in widespread catastrophic flash flooding.	Village contracts with Ramapo PD and Ramapo Highway to handle these impacts. all impacts were resolved.
July 9-10, 2023	N/A	N/A	Severe storms and flooding resulted in road closures, including portions of the Palisades Interstate Parkway, throughout Rockland County.	Village contracts with Ramapo PD and Ramapo Highway to handle these impacts. all impacts were resolved. The Village runs through Exit 11 and 12 of the PIP

EM = Emergency Declaration (FEMA)
 FEMA = Federal Emergency Management Agency
 DR = Major Disaster Declaration (FEMA)
 N/A = Not applicable

Hazard Ranking and Vulnerabilities

The hazard profiles in Volume I have detailed information regarding each planning partner’s vulnerability to the identified hazards. The following summarizes presents key risk assessment results for the Village of New Hempstead.

Hazard Ranking

The participating jurisdictions have differing degrees of vulnerability to the hazards of concern, so each jurisdiction ranked its own degree of risk to each hazard. The community-specific hazard ranking is based on problems and impacts identified by the risk assessment presented in Volume I. The ranking process involves an assessment of the likelihood of occurrence for each hazard; the potential impacts of the hazard on people, property, and the economy; community capabilities to address the hazard; and changing future climate conditions. New Hempstead reviewed the County hazard ranking and individual results to assess the relative risk of the hazards of concern to the community. During the review of the hazard ranking, the Village agreed with the following hazard rankings in table 9.11-15.

Table 9.11-15 shows New Hempstead’s final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 9.11-15. Hazard Ranking

Hazard	Rank
Dam Failure	Low
Disease Outbreak	Medium
Drought	Medium
Earthquake	Low
Extreme Temperature	Medium
Flood	Medium
Landslide	Low
Severe Weather	High
Severe Winter Weather	High
Wildfire	Medium

Note: The scale is based on the hazard rankings established in Volume I, modified as appropriate based on review by the jurisdiction

Critical Facilities

Table 9.11-16 identifies critical facilities in the community located in the 1- and 0.2-percent annual chance floodplains.

Table 9.11-16. Critical Facilities Flood Vulnerability

Name	Type	Exposure		Addressed by Proposed Action	Already Protected to 0.2 percent Flood Level (describe protections)
		1 percent Event	0.2 percent Event		
The Village of New Hempstead has no critical facilities located within the 1- or 0.2-percent Annual Chance Flood Hazard Area.					

Source: Rockland County 2023, FEMA

In addition to critical facilities that are exposed to flooding, the following high hazard dams are in or could impact the Village of New Hempstead:

- First Reservoir Dam, located in Thiells on Horse Chock Brook.
- Lake Deforest Dam, located in West Nyack on the Hackensack River.
- Lake Welch Dam, located in Willow Grove on the Minisceongo Creek.
- Lake Sebago Dam, located in Sloatsburg on the Stony Brook Creek.
- Like Garnerville Dam, located in West Haverstraw on the Minisceongo Creek.
- Tivoli Lake Dam, located in Sloatsburg on the Tr-Ramapo River.
- Potake Lake Dam, located in Sloatsburg on the Tr-Ramapo River.
- Lake Kanawauke Dam, located in New Sebago Beach on the Stony Brook.
- Lake Suzanne Dam, located in Spring Valley on the Pascack Brook.
- Lake Lucille Dam, located in Lake Lucille on the Hackensack River.
- Central Nyack Dam, located in Central Nyack.
- Pine Grove Lake Dam, located in Sloatsburg on the Tr-Ramapo River.
- Congers Lake Dam, located in Congers on the E Branch Hack.

Identified Issues

After review of the Village of New Hempstead’s hazard event history, hazard rankings, hazard location, and current capabilities, the Village identified the following vulnerabilities within their community:

- The bank along the north branch of Pascack Brook is not stabilized.
- The bank along Willow Tree Brook is not stabilized.
- The current comprehensive plan does not incorporate natural disaster mitigation techniques.
- The current emergency response plans do not implement monitoring or warning systems.
- There is a need to enhance the public awareness program in the municipality.
- Floodplain management and ordinance enforcement staff are not Certified Floodplain Managers.

9.11.7 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and prioritizes actions to address over the next five years.

Past Mitigation Initiative Status

Table 9.11-17 indicates progress on the Village’s mitigation strategy identified in the 2019 HMP. Actions that are still recommended but not completed or that are in progress are carried forward and combined with new actions as part of the mitigation strategy for this plan update. Previous actions that are now ongoing programs and capabilities are indicated as such and are presented in the capability assessment earlier in this annex.

Additional Mitigation Efforts

In addition to the mitigation initiatives completed in Table 9.11-17, the Village of New Hempstead did not identify any additional mitigation efforts completed since the last HMP.

Table 9.11-17. Status of Previous Mitigation Actions

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
New Hempstead – 1	Pascack Brook Stabilization	Flood, Severe Storm, Nor'easter	Village Engineer	The bank along the north branch of Pascack Brook is not stabilized. Bank stabilization along North Branch of Pascack Brook – various locations.	1. No Progress 2. An obstacle is funding and lack of resources.	1. Include 2. Bank stabilization along North Branch of Pascack Brook. 3. N/A
New Hempstead – 2	Willow Tree Brook Stabilization	Flood, Severe Storm, Nor'easter	Village Engineer	The bank along Willow Tree Brook is not stabilized. Bank stabilization of Willow Tree Brook near Ashlaun Ave.	1. No Progress 2. An obstacle is funding and lack of resources.	1. Include 2. Bank stabilization of Willow Tree Brook near Ashlaun Ave. 3. N/A
New Hempstead – 3	Comprehensive Plan Update	All Hazards	Village and County Planning	The current comprehensive plan does not incorporate natural disaster mitigation techniques. Ensure that local comprehensive plans incorporate natural disaster mitigation techniques through a courtesy review or draft plans by the County Planning Department.	1. No Progress 2. An obstacle is lack of staff capabilities.	1. Include 2. Ensure that local comprehensive plans incorporate natural disaster mitigation techniques through a courtesy review or draft plans by the County Planning Department. 3. N/A

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
New Hempstead – 4	Emergency Response Plan Review	All Hazards	Village	<p>The current emergency response plans do not implement monitoring or warning systems.</p> <p>Review existing emergency response plans for enhancement opportunities: work with social support agencies, homeowners’ associations and general public to develop and implement monitoring and warning systems focused on vulnerable populations and provision of adequate shelter facilities.</p>	<p>1. No Progress</p> <p>2. An obstacle is limited staff availability.</p>	<p>1. Include</p> <p>2. Review existing emergency response plans for enhancement opportunities: work with social support agencies, homeowners’ associations and general public to develop and implement monitoring and warning systems focused on vulnerable populations and provision of adequate shelter facilities.</p> <p>3. N/A</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
New Hempstead – 5	Public Awareness Program	All Hazards	Village	<p>There is a need to enhance the public awareness program in the municipality.</p> <p>Public awareness program on hazards, prevention and mitigation: assist CPG Chairperson in maintenance of mitigation planning web presence; assist CPG Chairperson in preparation of annual hazards and mitigation planning fact sheet and its distribution; assist CPG chairperson in preparation of hazards survey; periodic discussion of hazard mitigation and the mitigation plan at other regular local meetings; use of annual flyers, newsletters, advertisements, or radio/TV announcements, etc. at the discretion of the jurisdiction (incorporating as much free information as possible from the FEMA publications warehouse and other appropriate sources.</p>	<p>1. No Progress 2. An obstacle is lack of resources and staff availability.</p>	<p>1. Include 2. Assist CPG Chairperson in maintenance of mitigation planning web presence; assist CPG Chairperson in preparation of annual hazards and mitigation planning fact sheet and its distribution; assist CPG chairperson in preparation of hazards survey; periodic discussion of hazard mitigation and the mitigation plan at other regular local meetings; use of annual flyers, newsletters, advertisements, or radio/TV announcements, etc. at the discretion of the jurisdiction (incorporating as much free information as possible from the FEMA publications warehouse and other appropriate sources. 3. N/A</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
New Hempstead – 6	Certified Floodplain Managers	Flood, Severe Storm, Nor'easter	Village Floodplain Administrator	Floodplain management and ordinance enforcement staff are not Certified Floodplain Managers. Require staff involved in floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs).	1. No Progress 2. An obstacle is lack of staff capabilities and time.	1. Include 2. Require staff involved in floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs). 3. N/A

Proposed Hazard Mitigation Initiatives for the HMP Update

New Hempstead participated in the mitigation strategy workshop for this HMP to identify appropriate actions to include in a local hazard mitigation strategy. Its comprehensive consideration of all possible activities to address hazards of concern included review of the following FEMA documents:

- FEMA 551 “Selecting Appropriate Mitigation Measures for Floodprone Structures” (March 2007)
- FEMA “Mitigation Ideas—A Resource for Reducing Risk to Natural Hazards” (January 2013).

The action worksheets included at the end of this annex list the mitigation actions that New Hempstead would like to pursue in the future to reduce the effects of hazards. The actions are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in the Village’s priorities.

Table 9.11-18 indicates the range of proposed mitigation action categories. The four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table to further demonstrate the wide range of activities and mitigation measures selected.

Volume I identifies 14 evaluation criteria for prioritizing the mitigation actions. To assist with rating each mitigation action as high, medium, or low priority, a numeric rank is assigned (-1, 0, or 1) for each of the evaluation criteria. Table 9.11-19 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Table 9.11-18. Analysis of Mitigation Actions by Hazard and Category

Hazard	Actions That Address the Hazard, by Action Category									
	FEMA				CRS					
	LPR	SIP	NSP	EAP	PR	PP	PI	NR	SP	ES
Dam Failure	2	-	-	1	2	-	1	-	-	-
Disease Outbreak	1	-	-	1	1	-	1	-	-	-
Drought	2	-	-	1	2	-	1	-	-	-
Earthquake	2	-	-	1	2	-	1	-	-	-
Extreme Temperature	2	-	-	1	2	-	1	-	-	-
Flood	3	2	-	1	3	2	1	-	-	-
Landslide	2	-	-	1	2	-	1	-	-	-
Severe Weather	3	2	-	1	3	2	1	-	-	-
Severe Winter Weather	2	-	-	1	2	-	1	-	-	-
Wildfire	2	-	-	1	2	-	1	-	-	-

Local Plans and Regulations (LPR)—These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.

Structure and Infrastructure Project (SIP)—These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct structures to reduce the impact of hazards.

Natural Systems Protection (NSP)—These are actions that minimize damage and losses and preserve or restore the functions of natural systems.

Education and Awareness Programs (EAP)—These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities

Preventative Measures (PR)—Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.

Property Protection (PP)—These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.

Public Information (PI)—Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.

Natural Resource Protection (NR)—Actions that minimize hazard loss and preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.

Structural Flood Control Projects (SP)—Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.

Emergency Services (ES)—Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities

Table 9.11-19. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Other Community Objectives	Total	High / Medium / Low
2024-New Hempstead-01	Pascack Brook Stabilization	1	1	1	0	0	0	1	1	0	1	1	1	1	0	9	Medium
2024-New Hempstead-02	Willow Tree Brook Stabilization	1	1	1	0	0	0	1	1	0	1	1	1	1	0	9	Medium
2024-New Hempstead-03	Comprehensive Plan Update	1	1	1	1	1	1	1	1	1	1	1	1	1	1	13	High
2024-New Hempstead-04	Emergency Response Plan Review	1	1	1	1	1	1	0	1	1	1	0	1	1	1	11	High
2024-New Hempstead-05	Public Awareness Program	1	1	1	1	0	1	1	1	0	1	1	1	1	1	11	High
2024-New Hempstead-06	Certified Floodplain Managers	1	1	1	1	1	1	1	1	0	1	0	1	1	1	11	High

Note: Volume I, Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14).

Action 2024-New HempsteadV-01. Pascack Brook Stabilization

Action Name:	2024-New Hempstead-01	
Description of the Problem:	The bank along the north branch of Pascack Brook is not stabilized which is leading to an increase in flooding events due to severe storm events.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Village will conduct a bank stabilization study along North Branch of Pascack Brook and will implement the best and most cost-effective solution and will conduct routine maintenance to ensure the stability of the bank	
Lead Agency:	Village Engineer	
Supporting Agencies:	N/A	
Estimated Cost:	High (> \$100,000)	
Potential Funding Sources:	FEMA HMA, State, Local	
Implementation Timeline:	Short Term (<5 yrs.)	
Goals Met:	2, 4	
Benefits:	This action will lead to reduced flooding.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Properties located near the Brook may otherwise be at risk of damage or collapse due to severe storms.	
Impact on Critical Facilities/Lifelines:	Conserving resources that may otherwise need to respond to these properties will free up personnel to conduct emergency operations for other disasters.	
Impact on Capabilities	The need for Brook stream restoration following a severe storm will be decreased due to the protection that the stabilization provides.	
Impact on Future Development:	Preserving a healthy environment can drive tourism and new residents to the area.	
Climate Change Considerations:	Extreme events are likely to increase in frequency and severity, including severe storms that can cause flooding and erosion. This may damage the Brook and the properties which it is meant to protect.	
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input type="checkbox"/> Medium <input checked="" type="checkbox"/> Low
Alternatives	Action	Evaluation
	No Action	Problem continues.

	Retreat from areas near Brook.	Costly, unpopular.
	Levees along stream.	Not feasible/environmentally damaging, costly.

Action 2024-New HempsteadV-02. Willow Tree Brook Stabilization

Action Name:	2024-New Hempstead-02	
Description of the Problem:	The bank along Willow Tree Brook is not stabilized which is leading to an increase in flooding events due to severe storm events.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Village will conduct a bank stabilization study along Willow Tree Brook and will implement the best and most cost-effective solution and will conduct routine maintenance to ensure the stability of the bank.	
Lead Agency:	Village Engineer	
Supporting Agencies:	N/A	
Estimated Cost:	High (> \$100,000)	
Potential Funding Sources:	FEMA HMA, State, Local	
Implementation Timeline:	Short Term (<5 yrs.)	
Goals Met:	2, 4	
Benefits:	This action will lead to reduced flooding.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Properties located near the Brook may otherwise be at risk of damage or collapse due to severe storms.	
Impact on Critical Facilities/Lifelines:	Conserving resources that may otherwise need to respond to these properties will free up personnel to conduct emergency operations for other disasters.	
Impact on Capabilities	The need for Brook stream restoration following a severe storm will be decreased due to the protection that the stabilization provides.	
Impact on Future Development:	Preserving a healthy environment can drive tourism and new residents to the area.	
Climate Change Considerations:	Extreme events are likely to increase in frequency and severity, including severe storms that can cause flooding and erosion. This may damage the Brook and the properties which it is meant to protect.	

Priority: <i>Check one</i>	<input type="checkbox"/> High	<input type="checkbox"/> Medium	<input checked="" type="checkbox"/> Low
Alternatives	Action		Evaluation
	No Action		Problem continues.
	Retreat from areas near Brook.		Costly, unpopular.
	Levees along stream.		Not feasible/environmentally damaging, costly.

Action 2024-New HempsteadV-03. Comprehensive Plan Update

Action Name:	2024-New Hempstead-03		
Description of the Problem:	The current comprehensive plan does not integrate natural disaster mitigation techniques from the HMP that address dam/levee failure, disease outbreak, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm and wildfire.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire	
Description of the Solution:	The Village will ensure that local comprehensive plans incorporate natural disaster mitigation techniques through a courtesy review or draft plans by the County Planning Department.		
Lead Agency:	Village and County Planning		
Supporting Agencies:	N/A		
Estimated Cost:	Medium (\$10,000 to \$100,000)		
Potential Funding Sources:	Local		
Implementation Timeline:	Short Term (<5 yrs.)		
Goals Met:	1, 2, 4, 6, 7		
Benefits:	This action improves integration of the hazard mitigation plan.		
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	Natural disasters affect everyone in the community, and an outdated comprehensive plan would leave socially vulnerable populations at risk to natural disaster events.		
Impact on Critical Facilities/Lifelines:	Updating the comprehensive plan to include natural disasters will help critical facilities and lifelines be more resilient to impacts and can continue to function properly for the well being of the community.		

Impact on Capabilities	The comprehensive plan update will help strengthen the local capabilities of the emergency response departments and staff to know what to do during a natural disaster event.		
Impact on Future Development:	An updated comprehensive plan will help plan for future development in being more resilient to natural disaster events.		
Climate Change Considerations:	The updated comprehensive plan will take into account climate change impacts when looking at ways to mitigate natural disaster events. This will limit climate change impacts on the community.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	Do nothing.		Comprehensive plan will be outdated, and the community will not be prepared for natural disasters.
	Update the Comprehensive Plan without adding natural disasters.		Costly, community will not be prepared for natural disasters.
	Start over for the entire Comprehensive Plan.		Costly, long timeline.

Action 2024-New HempsteadV-04. Emergency Response Plan Review

Action Name:	2024-New Hempstead-04	
Description of the Problem:	The current emergency response plans do not implement monitoring or warning systems for dam/levee failure, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, and wildfire.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	The Village will review existing emergency response plans for enhancement opportunities: work with social support agencies, homeowners’ associations and general public to develop and implement monitoring and warning systems focused on vulnerable populations and provision of adequate shelter facilities.	
Lead Agency:	Village	
Supporting Agencies:	N/A	
Estimated Cost:	Medium (\$10,000 to \$100,000)	
Potential Funding Sources:	Local	
Implementation Timeline:	Short Term (<5yrs.)	
Goals Met:	1, 2, 5, 7	
Benefits:	This action improves integration of the hazard mitigation plan.	
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)

CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	The action will protect socially vulnerable populations by implementing monitoring of disaster events and implementing warning systems to allow adequate response time during emergency events.	
Impact on Critical Facilities/Lifelines:	The action will implement warning systems to allow adequate response time to protect critical facilities and lifelines that may be subject to damage from emergency events.	
Impact on Capabilities	The action will result in warning systems and monitoring for emergency situations.	
Impact on Future Development:	N/A	
Climate Change Considerations:	Climate change may result in an increase in the frequency and severity of weather related disaster events. This action will increase the capabilities to respond to these events.	
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives	Action	Evaluation
	Do nothing.	The emergency response plan will be outdated.
	Rely on federal emergency response.	Monitoring and warning systems may not be available.
	Rely on state emergency response.	Monitoring and warning systems may not be available.

Action 2024-New HempsteadV-05. Public Awareness Program

Action Name:	2024-New Hempstead-05	
Description of the Problem:	The Village residents are unaware of how to handle hazard events and need public outreach to inform them how to protect themselves and their property against damage from dam/levee failures, disease outbreaks, droughts, earthquakes, extreme temperatures, floods, landslides, severe storms, severe winter storms, and wildfires..	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	The Village will assist the CPG Chairperson in maintenance of mitigation planning web presence; assist CPG Chairperson in preparation of annual hazards and mitigation planning fact sheet and its distribution; assist CPG chairperson in preparation of hazards survey; periodic discussion of hazard mitigation and the mitigation plan at other regular local meetings; use of annual flyers, newsletters, advertisements, or radio/TV announcements, etc. at the discretion of the jurisdiction (incorporating as much free information as possible from the FEMA.	
Lead Agency:	Village	
Supporting Agencies:	N/A	
Estimated Cost:	Medium (\$10,000 to \$100,000)	

Potential Funding Sources:	Local		
Implementation Timeline:	Short Term (<5 yrs.)		
Goals Met:	1, 2, 3		
Benefits:	This action improves the knowledge of the public.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR)	<input type="checkbox"/> Natural Systems Protection (NSP)	
	<input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input checked="" type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR)	<input type="checkbox"/> Natural Resource Protection (NR)	
	<input type="checkbox"/> Property Protection (PP)	<input type="checkbox"/> Structural Flood Control Projects (SP)	
	<input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	This action would benefit the socially vulnerable by providing them information to make informed decisions about natural disaster events, and where to seek shelter and resources.		
Impact on Critical Facilities/Lifelines:	N/A		
Impact on Capabilities	This action would allow the local department staff to have the availability to be able to assist local residents.		
Impact on Future Development:	This action may inform residents on problem areas and could influence decisions on where to build new development and growth.		
Climate Change Considerations:	This action would supply residents with current climate change data to make informed decisions for the future.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action.		Problem continues.
	Encourage residents to educate themselves.		Residents may not be aware of where to access information.
	Ask non-profits to conduct outreach.		Non-profits may be unable or unwilling to provide outreach.

Action 2024-New HempsteadV-06. Certified Floodplain Managers

Action Name:	2024-New Hempstead-06		
Description of the Problem:	The Village’s floodplain management and ordinance enforcement staff are not Certified Floodplain Managers and flooding is becoming more common and frequent from severe storms and severe winter storms..		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure	<input checked="" type="checkbox"/> Flood	
	<input type="checkbox"/> Disease Outbreak	<input type="checkbox"/> Landslide	
	<input type="checkbox"/> Drought	<input checked="" type="checkbox"/> Severe Storm	
	<input type="checkbox"/> Earthquake	<input type="checkbox"/> Severe Winter Storm	
	<input type="checkbox"/> Extreme Temperature	<input type="checkbox"/> Wildfire	
Description of the Solution:	The Village will require staff involved in floodplain management and ordinance enforcement to become Certified Floodplain Managers. The Village will add/train sufficient members of their staff to adequately enforce NFIP regulations/floodplain management ordinances		
Lead Agency:	Village Floodplain Administrator		

Supporting Agencies:	N/A		
Estimated Cost:	Low (< \$10,000)		
Potential Funding Sources:	Local		
Implementation Timeline:	Short Term (<5 yrs.)		
Goals Met:	5, 7		
Benefits:	The Village will be better prepared for flood events.		
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR)	<input type="checkbox"/> Natural Systems Protection (NSP)	
	<input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR)	<input type="checkbox"/> Natural Resource Protection (NR)	
	<input type="checkbox"/> Property Protection (PP)	<input type="checkbox"/> Structural Flood Control Projects (SP)	
	<input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	N/A		
Impact on Critical Facilities/Lifelines:	N/A		
Impact on Capabilities	This action would add to the capabilities of the local staff to have knowledge on floodplain management and resilience.		
Impact on Future Development:	This action would allow local staff to have knowledge on floodplain management and resilience when planning for future development.		
Climate Change Considerations:	This action would take into account current climate change data for local staff to be informed when making planning considerations.		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	Do nothing.		The problem would persist.
	Rely on state floodplain management.		The state may not have the capability to provide this service.
	Rely on federal floodplain management.		The federal government may not have the capability to provide this service.

SECTION 9. JURISDICTIONAL ANNEXES

9.12 VILLAGE OF NEW SQUARE

This jurisdictional annex to the Rockland County Hazard Mitigation Plan (HMP) provides information to assist public and private sectors in the Village of New Square with reducing losses from future hazard events. This annex is not guidance of what to do when a disaster occurs; its focus is on actions that can be implemented prior to a disaster to reduce or eliminate damage to property and people. The annex presents a general overview of the Village of New Square, describes who participated in the planning process, assesses the Village’s risk, vulnerability, and capabilities, and outlines a strategy for achieving a more resilient community.

9.12.1 Hazard Mitigation Planning Team

The Village of New Square identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Village departments. The Municipal Clerk represented the community on the Rockland County HMP Planning Partnership and Steering Committee and supported the local planning process requirements by securing input from persons with specific knowledge to enhance the plan. All departments were asked to contribute to the annex development through reviewing and contributing to the capability assessment, reporting on the status of previously identified actions, and participating in action identification and prioritization.

Table 9.12-1 summarizes Village officials who participated in the development of the annex and in what capacity. Additional documentation of the Village’s planning activities through Planning Partnership meetings is included in Volume I.

Table 9.12-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: David Breuer, Municipal Clerk Address: 37 Reagan Road, New Square, NY 10977 Phone Number: 845-354-1000 Email: clerk@newsquare.us	Name/Title: Aaron Kaff, Director of Emergency Services Address: 37 Reagan Road, New Square, NY 10977 Phone Number: 845-354-1000 Email: oem@newsquare.us
National Flood Insurance Program Floodplain Administrator	
Name/Title: Manny Cormona, Code Enforcement Officer Address: 37 Reagan Road, New Square, NY 10977 Phone Number: 845-558-5904 Email: building@newsquare.us	

9.12.2 Municipal Profile

The Village of New Square is in the Town of Ramapo in Rockland County. It has a total area of 0.4 square miles. The village is located north of Hillcrest, east of Viola, south of New Hempstead, and west of New City. The Village is deemed the poorest town in the State, with the highest poverty and food stamp reciprocity rates in the United States. The Hillcrest Fire Department provides fire protection services for the Village. The Village maintains their own health clinic called the Refuah Health Center that serves the community.

Research has shown that some populations are at greater risk from hazard events because of decreased resources or physical abilities. These populations can be more susceptible to hazard events based on a number of factors including their physical and financial ability to react or respond during a hazard, and the location and construction quality of their housing. Data from the 2017-2021 American Community Survey indicates that 16.1 percent of the population is 5 years of age or younger, 2.1 percent is 65 years of age or older, 17.5 percent is non-English speaking, 60.4 percent is below the poverty threshold, and 3.4 percent is considered disabled.

9.12.3 Jurisdictional Capability Assessment and Integration

The Village of New Square performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Volume I describes the components included in the capability assessment and their significance for hazard mitigation planning. The jurisdictional assessment for this annex includes analyses of the following:

- Planning and regulatory capabilities
- Development and permitting capabilities
- Administrative and technical capabilities
- Fiscal capabilities
- Education and outreach capabilities
- Classification under various community mitigation programs
- Adaptive capacity to withstand hazard events

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into day-to-day local government operations. As part of the hazard mitigation analysis, planning and /policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress toward plan integration. Development of an updated mitigation strategy provided an opportunity for the Village of New Square to identify opportunities for integration of mitigation concepts that can be incorporated into municipal procedures.

Planning, Legal, and Regulatory Capability and Integration

Table 9.12-2 summarizes the regulatory tools that are available to New Square.

Table 9.12-2. Planning, Legal, and Regulatory Capability and Integration

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Codes, Ordinances, & Regulations				
Building Code	Yes	NYS Building Code & Chapter 140, 176, 196	State and Local	Building Department
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The NYS Building Code is intended to establish provisions that adequately protect public health, safety, and welfare through the minimum requirements for building systems using prescriptive and performance-related provisions. It is founded on broad-based principles that make possible the use of new materials and new building designs. The 2020 edition is an update to the 2018 edition published by the ICC. It is part of the Uniform Fire Prevention and Building Code.				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Zoning/Land Use Code	Yes	Local Law Zoning Amendments	Local	Building Department
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The local law zoning amendments amends the Village zoning code to bring the zoning code up to date with the goals, objectives and recommendations for the Comprehensive Plan adopted in 2022.				
Subdivision Code	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Site Plan Code	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Stormwater Management Code	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Real Estate Disclosure	Yes	New York State (NYS) mandate, Property Condition Disclosure Act, NY Code – Article 14 §460-467	State and Local	NYS Department of State
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> In addition to facing potential liability for failing to disclose under the exceptions to “caveat emptor,” a home seller must make certain disclosures under the law or pay a credit of \$500 to the buyer at closing. While the PCDA requires a seller to complete a standardized disclosure statement and deliver it to the buyer before the buyer signs the final purchase contract, in practice, most home sellers in New York opt not to complete the statement and instead pay the credit.				
Growth Management	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Environmental Protection Ordinance(s)	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Flood Damage Prevention Ordinance	Yes	Village Zoning Code, Article IV-2.F	Local	Building Department
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The code prohibits development that on lots that are under water, subject to periodic flooding, or wetlands. All requirements must be satisfied by measurement on dry land. This provision reduces risk by limited development to areas that are not already vulnerable.				
Wellhead Protection	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Emergency Management Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Climate Change Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other: Freeboard	Yes	State mandated BFE+2 for single and two-family residential construction, BFE+1 for all other construction types	State and Local	Building Department
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> A freeboard of two feet shall be added where the design flood elevation or other elevation requirements are specified. A freeboard shall not be required where it is not possible to obtain a design flood elevation from the FIRM or from any method established above and the design flood elevation is three feet above the highest adjacent grade.				
Other: Municipal Separate Storm Sewer System (MS4)	Yes	Stormwater Consortium	Local	Building Inspector
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> MS4 system within the Village is a collection of stormwater systems such as ditches, retention basin, road gutters, etc. which mitigation flooding seen in the Village. This code regulates and maintains those stormwater systems within the Village.				
Planning Documents				
General/Comprehensive Plan	Yes	Local Comprehensive Plan, adopted 11/14/2022	Local	Village Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The local comprehensive plan outlines the goals and objectives for the Village and includes a plan to implement these actions. The plan was recently updated in 2022.				
Capital Improvement Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Disaster Debris Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Floodplain Management or Watershed Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Stormwater Management Plan	Yes	Stormwater Consortium	Local	Building Inspector
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Stormwater management plan is included in the MS4 which regulates and maintains stormwater infrastructure within the Village.				
Open Space Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Urban Water Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Habitat Conservation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Economic Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Community Wildfire Protection Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Community Forest Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Transportation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Agriculture Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Climate Action/ Resiliency/Sustainability Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Tourism Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Business/ Downtown Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other (for example NYRCR, etc.)	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Response/Recovery Planning				
Comprehensive Emergency Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Continuity of Operations Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Substantial Damage Response Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Post-Disaster Recovery Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Public Health Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other	N/A	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

Development and Permitting Capability

Table 9.12-3 summarizes the capabilities of New Square to oversee and track development.

Table 9.12-3. Development and Permitting Capability

Indicate if your jurisdiction implements the following	Yes/No	Comment:
Do you issue development permits? <ul style="list-style-type: none"> If you issue development permits, what department is responsible? If you do not issue development permits, what is your process for tracking new development? 	Yes	The Building Department is responsible for issuing development permits.
Are permits tracked by hazard area? (For example, floodplain development permits.)	No	-
Do you have a buildable land inventory? <ul style="list-style-type: none"> If you have a buildable land inventory, please describe 	No	-
Describe the level of build-out in your jurisdiction.	N/A	-

Administrative and Technical Capability

Table 9.12-4 summarizes potential staff and personnel resources available to New Square and their current responsibilities that contribute to hazard mitigation.

Table 9.12-4. Administrative and Technical Capabilities

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
<i>Administrative Capability</i>		
Planning Board	Yes	Same as Village Board of Trustees acts as a Planning Board and conducts the plan reviews
Zoning Board of Adjustment	Yes	The Zoning Board is responsible for zoning regulations and review within the Village.
Planning Department	No	-

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
Mitigation Planning Committee	No	-
Environmental Board/Commission	No	-
Open Space Board/Committee	No	-
Economic Development Commission/Committee	No	-
Public Works/Highway Department	Yes	The Public Works Department is responsible for management of public services within the Village.
Construction/Building/Code Enforcement Department	Yes	The Building Department is responsible for building regulations within the Village.
Emergency Management/Public Safety Department	Yes	Village Emergency Manager is responsible for public safety and emergency management actions in the Village.
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	Yes	The Village pays for a company to clean the stormwater drains on an annual basis
Mutual aid agreements	Yes	Stormwater Consortium of Rockland County Town of Ramapo Highway Department
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	No	-
Other	-	-
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Contracts as needed
Engineers or professionals trained in building or infrastructure construction practices	Yes	Building Department – Engineer (Fusco Engineering)
Planners or engineers with an understanding of natural hazards	Yes	Building Department
Staff with expertise or training in benefit/cost analysis	No	-
Professionals trained in conducting damage assessments	No	-
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	Yes	Utilize Rockland County GIS; Municipal Clerk and Building Inspector received training to use it
Environmental scientist familiar with natural hazards	No	-
Surveyor(s)	No	-
Emergency Manager	Yes	Director, Aaron Kaff
Grant writer(s)	Yes	Contracts as needed.
Resilience Officer	No	-
Other (this could include stormwater engineer, environmental specialist, etc.)	-	-

Fiscal Capability

Table 9.12-5 summarizes financial resources available to New Square.

Table 9.12-5. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use? (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	Yes
Capital improvements project funding	Yes, occasional
Authority to levy taxes for specific purposes	Yes
User fees for water, sewer, gas or electric service	No
Impact fees for homebuyers or developers of new development/homes	Yes, permit fees, not impact fee
Stormwater utility fee	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	Yes
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	No
Other federal or state Funding Programs	Yes, State funding (sidewalks)
Open Space Acquisition funding programs	No
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	N/A

Education and Outreach Capability

Table 9.12-6 summarizes the education and outreach resources available to New Square.

Table 9.12-6. Education and Outreach Capabilities

Outreach Resources	Available? (Yes/No)	Comment:
Public information officer or communications office	No	-
Personnel skilled or trained in website development	No	-
Hazard mitigation information available on your website	No	-
Social media for hazard mitigation education and outreach	No	-
Citizen boards or commissions that address issues related to hazard mitigation	No	-
Warning systems for hazard events	Yes	The County utilizes NY-Alert and CodeRed (the backup to NY-Alert) for emergency notifications (all Towns and Villages have access to it).
Natural disaster/safety programs in place for schools	No	-
Organizations that conduct outreach to socially vulnerable populations and underserved populations	No	-
Public outreach mechanisms / programs to inform citizens on natural hazards, risk, and ways to protect themselves during such events	Yes	-

Outreach Resources	Available? (Yes/No)	Comment:
If yes, please describe.	-	<p>The Village is very proactive in education and outreach to the community residents.</p> <p>The Village and the Hillcrest Fire Department developed and published a coloring book to learn about important fires safety for children ('A Trip to the Fire Station').</p> <p>The Village developed and distributed carbon monoxide safety and emergency management fliers throughout the community.</p> <p>The Village developed safety tips on extension cord safety for portable heaters because residents do not cook on the Sabbath and maintain an open fire.</p> <p>The Village of Kaser has a mobile command center to assist with response efforts in times of emergencies.</p>

Community Classifications

Table 9.12-7 summarizes classifications for community programs available to New Square.

Table 9.12-7. Community Classifications

Program	Participating? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	No	-	-
New York State Department of Environmental Conservation (NYSDEC) Climate Smart Community	No	-	-
National Weather Service Storm Ready Certification	No	-	-
Firewise Communities classification	No	-	-
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable
 — = Unavailable

Adaptive Capacity

Adaptive capacity is defined as “the ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or respond to consequences” (IPCC, 2022). Each jurisdiction has a unique combination of capabilities to adjust to, protect from, and withstand a future hazard event, future conditions, and changing risk. Table 9.12-8 summarizes the adaptive capacity for each identified hazard of concern and the Village’s capability to address related actions using the following classifications:

- Strong: Capacity exists and is in use.
- Moderate: Capacity might exist; but is not used or could use some improvement.
- Weak: Capacity does not exist or could use substantial improvement.

Table 9.12-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Disease Outbreak	Moderate
Drought	Moderate
Earthquake	Moderate
Extreme Temperature	Moderate
Flood	Moderate
Landslide	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

9.12.4 National Flood Insurance Program Compliance

This section provides specific information on the management and regulation of the regulatory floodplain, including current and future compliance with the National Flood Insurance Program (NFIP). The floodplain administrator listed in Table 9.12-1 is responsible for maintaining this information.

NFIP Summary

Table 9.12-9 summarizes the NFIP statistics for New Square.

Table 9.12-9. Village of New Square NFIP Summary of Policy and Claim Statistics

# Policies	0
# Claims (Losses)	9
Total Loss Payments	\$27,452
# Repetitive Loss Properties (NFIP definition)	0
# Repetitive Loss Properties (FMA definition)	1
# Severe Repetitive Loss Properties	0
# Policies Within the 1% Annual Chance Flood Boundary	0

NFIP Definition of Repetitive Loss: The NFIP defines a repetitive loss property as any insurable building for which two or more claims of more than \$1,000 were paid by the NFIP within any rolling 10-year period since 1978.

FMA Definition of Repetitive Loss: FEMA’s Flood Mitigation Assistance (FMA) program defines a repetitive loss property as any insurable building that has incurred flood-related damage on two occasions, in which the cost of the repair, on average, equaled or exceeded 25 percent of the market value of the structure at the time of each such flood event.

Definition of Severe Repetitive Loss: A residential property covered under an NFIP flood insurance policy and: (a) That has at least four NFIP claim payments over \$5,000 each, and the cumulative amount of such claims payments exceeds \$20,000; or (b) For which at least two separate claims payments have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building. At least two of the claims must have occurred within any 10-year period, more than 10 days apart.

Source: FEMA, December 2023

Note: RL count may include properties also identified as SRL.

Flood Vulnerability Summary

Table 9.12-10 provides a summary of the NFIP program in New Square.

Table 9.12-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction. <ul style="list-style-type: none"> Do you maintain a list of properties that have been damaged by flooding? 	The Village experiences flooding, especially in low-lying areas. No, the Village does not maintain a list of properties damaged by flooding.
Do you maintain a list of properties that have been damaged by flooding?	The Village does not maintain a list at this time.
Do you maintain a list of property owners interested in flood mitigation?	The Village does not maintain a list at this time.
How many homeowners and/or business owners are interested in mitigation (elevation or acquisition)?	Unknown, at this time.
Are any RiskMAP projects currently underway in your jurisdiction? <ul style="list-style-type: none"> If so, state what projects are underway. 	No, there are no current RiskMAP projects underway at this time.
How do you make Substantial Damage determinations?	If needed, Building Department would perform an onsite inspection.
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	Unknown, at this time.
How many properties have been mitigated (elevation or acquisition) in your jurisdiction? <ul style="list-style-type: none"> If there are mitigation properties, how were the projects funded? 	Unknown, at this time.
Do your flood hazard maps adequately address the flood risk within your jurisdiction? <ul style="list-style-type: none"> If not, state why. 	Yes
NFIP Compliance	
What local department is responsible for floodplain management?	The Village Emergency Manager
Are any certified floodplain managers on staff in your jurisdiction?	No.
Do you have access to resources to determine possible future flooding conditions from climate change?	No.
Does your floodplain management staff need any assistance or training to support its floodplain management program? <ul style="list-style-type: none"> If so, what type of assistance/training is needed? 	Yes, seminars with current trends and data.
Provide an explanation of NFIP administration services you provide (e.g., permit review, GIS, education/outreach, inspections, engineering capability)	Unknown at this time.
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	During Review, calculations of increase in volume and SF determined.
What are the barriers to running an effective NFIP program in the community, if any?	Unknown at this time.
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? <ul style="list-style-type: none"> If so, state the violations. 	No. The Village was suspended and sanctioned from the NFIP in 2014. However, the Community State Book as of 2024 does not indicate that the Village is suspended.
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	June 11, 2021
What is the local law number or municipal code of your flood damage prevention ordinance?	Village Zoning Code, Article IV-2.F

NFIP Topic	Comments
What is the date that your flood damage prevention ordinance was last amended?	2007
Does your floodplain management program meet or exceed minimum requirements? <ul style="list-style-type: none"> If exceeds, in what ways? 	Floodplain management meets minimum requirements.
Are there other local ordinances, plans or programs (e.g., site plan review) that support floodplain management and meeting the NFIP requirements? For instance, does the planning board or zoning board consider efforts to reduce flood risk when reviewing variances such as height restrictions?	No, not at this time.
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	The Village would be interested in joining the CRS program and undertaking other initiatives to ensure their compliance with the NFIP program.

9.12.5 Growth/Development Trends

Understanding how past, current, and projected development patterns have or are likely to increase or decrease risk in hazard areas is a key component to appreciating a jurisdiction’s overall risk to its hazards of concern. Recent and expected future development trends, including major residential/commercial development and major infrastructure development, are summarized in Table 9.12-11 through Table 9.12-13.

Table 9.12-11. Number of Building Permits for New Construction Issued Since the Previous HMP

	New Construction Permits Issued			Total
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	
2018				
Total Permits	0	0	0	-
Permits within SFHA	0	0	0	-
2019				
Total Permits	0	0	0	-
Permits within SFHA	0	0	0	-
2020				
Total Permits	0	0	0	-
Permits within SFHA	0	0	0	-
2021				
Total Permits	0	0	0	-
Permits within SFHA	0	0	0	-
2022				
Total Permits	0	0	0	-
Permits within SFHA	0	0	0	-

SFHA = Special Flood Hazard Area (1% flood event)

Table 9.12-12. Recent Major Development and Infrastructure from 2018 to Present

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
No major development or infrastructure reported.					

* Only location-specific hazard zones or vulnerabilities identified.

Table 9.12-13. Known or Anticipated Major Development and Infrastructure in the Next Five Years

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
No major development or infrastructure anticipated.					

* Only location-specific hazard zones or vulnerabilities identified.

9.12.6 Jurisdictional Risk Assessment

The hazard profiles in Volume I provide detailed information regarding each planning partner’s vulnerability to the identified hazards, including summaries of the Village of New Square’s risk assessment results and data used to determine the hazard ranking. Key local risk assessment information is presented below.

Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Village are shown in Figure 9.12-1 and Figure 9.12-2. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps are provided only for hazards that can be identified clearly using mapping techniques and technologies and for which New Square has significant exposure. The maps show the location of potential new development, where available.

Figure 9.12-1. Village of New Square Flood and Dam Inundation Hazard Area Extent and Location

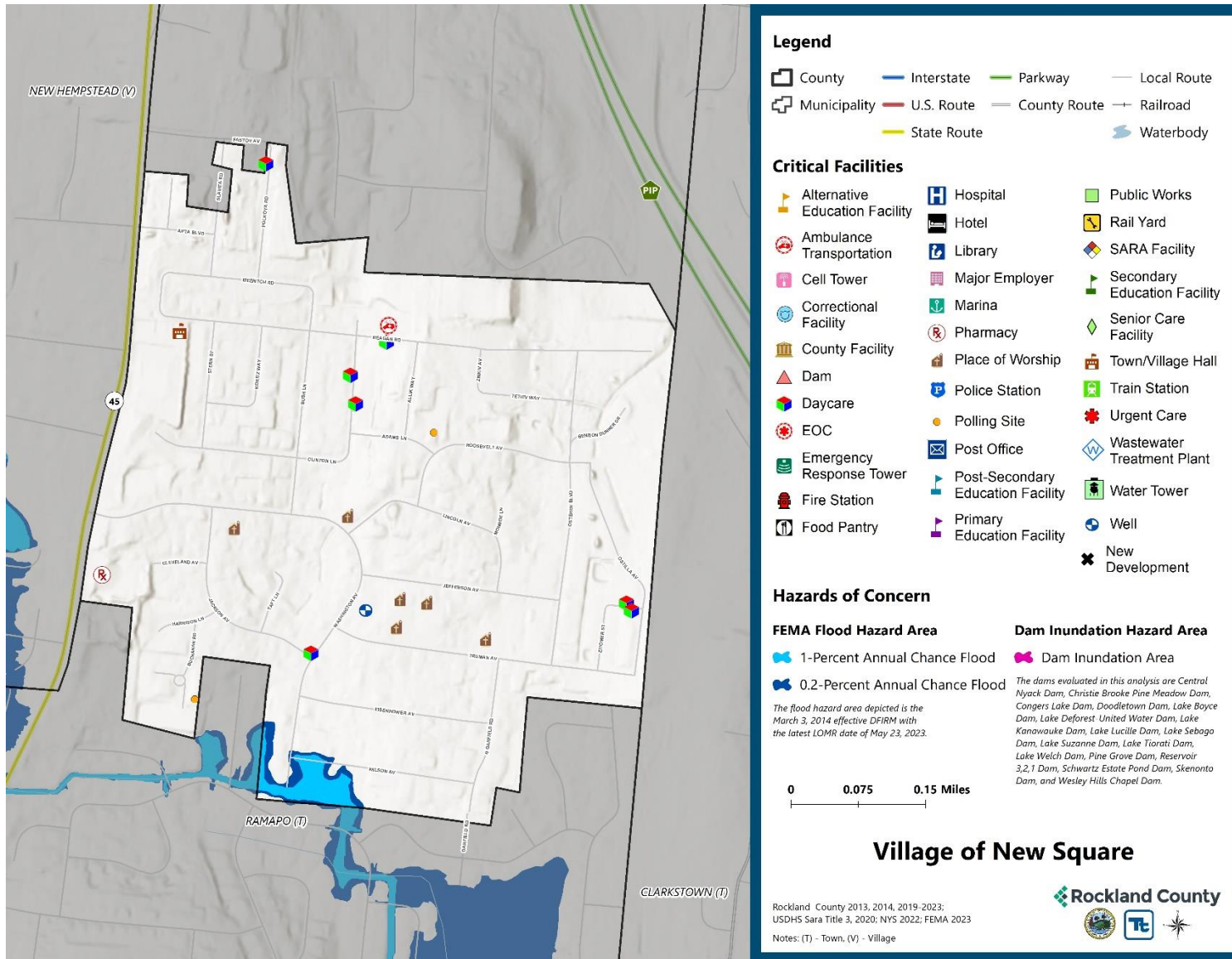
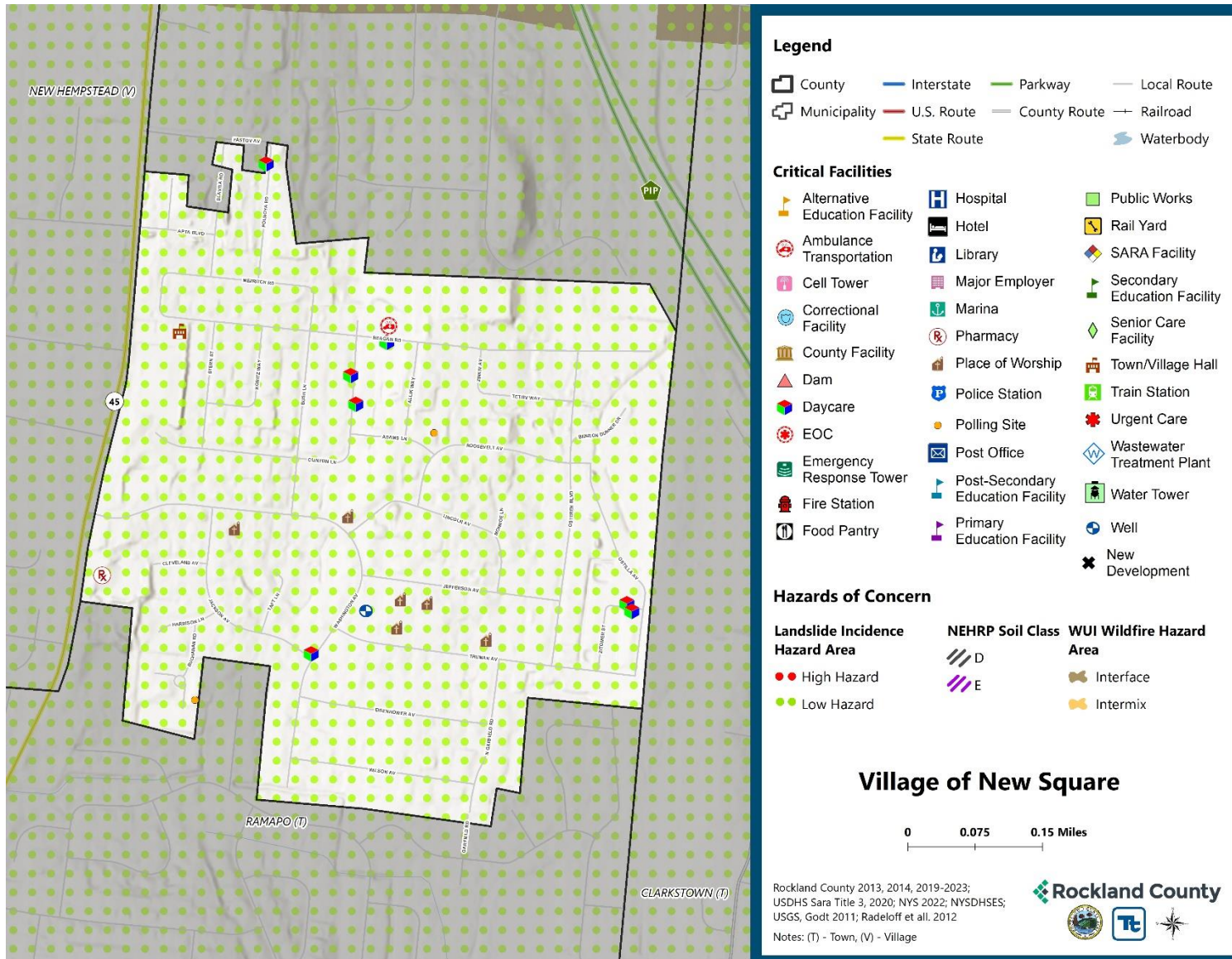


Figure 9.12-2. Village of New Square Landslide, Earthquake, and Wildfire Hazard Area Extent and Location



Hazard Event History

The history of natural and non-natural hazard events in the Village of New Square is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 9.12-14 provides details on loss and damage in the Village during hazard events since the last hazard mitigation plan update.

Table 9.12-14. Hazard Event History in the Village of New Square

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Summary of Damage and Losses in the Village
Jan 20, 2020 - May 11, 2023	New York Covid-19 (3434-EM-NY, 4480-DR-NY)	Yes	The Covid-19 pandemic resulted in nationwide shutdowns, social distancing and masking requirements, and immunization efforts. Since the start of the pandemic, roughly 950 deaths have been reported in Rockland County. The federal Public Health Emergency expired in May 2023 but illness continues to occur as the virus shifts to becoming endemic.	The Village followed mandated social distancing and business/public closures which impacted the economy and health of the community.
August 4, 2020	New York Tropical Storm Isaias (4567-DR-NY)	Yes	The center of Isaias passed about 65 miles west of New York City at 3 pm on August 4, 2020. Tropical storm force winds extended well east of the center of circulation. In addition, 1 to 3 inches of rainfall, highest west, were recorded across the county. These types of winds and rainfall across the area resulted in numerous trees and tree limbs being downed, power outages, damages to homes and automobiles, and disruption to transit.	No recorded major losses for the Village for Isaias.
August 21-24, 2021	New York Hurricane Henri (3565-EM-NY)	Yes	Rainfall from Tropical Storm Henri resulted in widespread flash flooding across southeastern New York, particularly portions of the Lower Hudson Valley. Rainfall totals generally ranged from 2-5 inches, with this rain coming in addition to the 2-5 inches that fell during the predecessor rainfall event the night before.	No recorded major losses for the Village for Henri.
September 1-3, 2021	New York Remnants of Hurricane Ida (3572-EM-NY, 4615-DR-NY)	Yes	Extremely heavy rainfall associated with the remnants of Hurricane Ida overspread southeast New York during the evening of September 1 and continued through the early morning hours of September 2. Rainfall totals ranged from 5-8 inches across much of the region, with much of that rain falling in just a few hours. This resulted in widespread catastrophic flash flooding.	No recorded major losses for the Village for Ida.

EM = Emergency Declaration (FEMA)
 FEMA = Federal Emergency Management Agency
 DR = Major Disaster Declaration (FEMA)
 N/A = Not applicable

Hazard Ranking and Vulnerabilities

The hazard profiles in Volume I have detailed information regarding each planning partner’s vulnerability to the identified hazards. The following summarizes presents key risk assessment results for the Village of New Square.

Hazard Ranking

The participating jurisdictions have differing degrees of vulnerability to the hazards of concern, so each jurisdiction ranked its own degree of risk to each hazard. The community-specific hazard ranking is based on problems and impacts identified by the risk assessment presented in Volume I. The ranking process involves an assessment of the likelihood of occurrence for each hazard; the potential impacts of the hazard on people, property, and the economy; community capabilities to address the hazard; and changing future climate conditions. New Square reviewed the County hazard ranking and individual results to assess the relative risk of the hazards of concern to the community. During the review of the hazard ranking, the Village agreed with the following hazard ranking in Table 9.12-15.

Table 9.12-15 shows New Square’s final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 9.12-15. Hazard Ranking

Hazard	Rank
Dam Failure	Low
Disease Outbreak	Medium
Drought	Medium
Earthquake	Low
Extreme Temperature	Medium
Flood	Medium
Landslide	Low
Severe Weather	High
Severe Winter Weather	High
Wildfire	Low

Note: The scale is based on the hazard rankings established in Volume I, modified as appropriate based on review by the jurisdiction

Critical Facilities

Table 9.12-16 identifies critical facilities in the community located in the 1- and 0.2-percent annual chance floodplains.

Table 9.12-16. Critical Facilities Flood Vulnerability

Name	Type	Exposure		Addressed by Proposed Action	Already Protected to 0.2% Flood Level (describe protections)
		1% Event	0.2% Event		
The Village of New Square has no critical facilities located within the 1- or 0.2-percent Annual Chance Flood Hazard Area.					

Source: Rockland County 2023, FEMA

In addition to critical facilities that are exposed to flooding, the following high hazard dams are located in or could impact New Square:

- First Reservoir Dam, located in Thiells on Horse Chock Brook.
- Lake Deforest Dam, located in West Nyack on the Hackensack River.
- Lake Welch Dam, located in Willow Grove on the Minisceongo Creek.
- Lake Sebago Dam, located in Sloatsburg on the Stony Brook Creek.
- Like Garnerville Dam, located in West Haverstraw on the Minisceongo Creek.
- Tivoli Lake Dam, located in Sloatsburg on the Tr-Ramapo River.
- Potake Lake Dam, located in Sloatsburg on the Tr-Ramapo River.
- Lake Kanawauke Dam, located in New Sebago Beach on the Stony Brook.
- Lake Suzanne Dam, located in Spring Valley on the Pascack Brook.
- Lake Lucille Dam, located in Lake Lucille on the Hackensack River.
- Central Nyack Dam, located in Central Nyack.
- Pine Grove Lake Dam, located in Sloatsburg on the Tr-Ramapo River.
- Congers Lake Dam, located in Congers on the E Branch Hack.

Identified Issues

After review of the Village of New Square’s hazard event history, hazard rankings, hazard location, and current capabilities, the Village of New Square identified the following vulnerabilities within their community:

- The Village currently does not have a list of properties that have been flooded and/or damaged as a result of heavy rain and flooding events.
- Structures in the Village that were built before codes and standards need to be brought to code.
- Many of the stormwater catch basins in the Village are undersized and causes flooding.
- There is debris and garbage in the Pascack River that causes flooding in the Village.
- Lack of backup power and emergency fuel supply in the Village for use during power outages and emergencies.
- The Village currently does not have medical supplies to provide to residents in the event of a disaster or emergency.
- The Village is in need of a MERV to respond to emergencies in the municipality.
- The current emergency response plans do not implement monitoring or warning systems.
- The Village has been suspended from the National Flood Insurance Program (NFIP) (sanctioned date March 4, 2014; one day after the last flood maps became effective).

9.12.7 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and prioritizes actions to address over the next five years.

Past Mitigation Initiative Status

Table 9.12-17 indicates progress on the Village’s mitigation strategy identified in the 2019 HMP. Actions that are still recommended but not completed or that are in progress are carried forward and combined with new actions as part of the mitigation strategy for this plan update. Previous actions that are now ongoing programs and capabilities are indicated as such and are presented in the capability assessment earlier in this annex.

Additional Mitigation Efforts

In addition to the mitigation initiatives completed in Table 9.12-17, New Square identified the following mitigation efforts completed since the last HMP:

- The Village Comprehensive Plan was updated and adopted November 14, 2022.
- The Village has identified a flood prone roadway in the Village and developed mitigation actions to take.
- The Village has proposed local law amendment for zoning and a notice of hearing was issued on February 6, 2023.

Since the adoption of the County’s first HMP, New Square has made significant mitigation progress in the following areas:

- Amendments to local laws to include hazard mitigation.
- Updates to comprehensive plan to include hazard mitigation.
- Identification of flood prone areas.

Table 9.12-17. Status of Previous Mitigation Actions

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
New Square – 1	Flood Damaged Properties	Flood, Severe Storm	Village Building Department and Emergency Manager	<p>The Village currently does not have a list of properties that have been flooded and/or damaged as a result of heavy rain and flooding events.</p> <p>The Village will maintain a log of properties by address/block/lot that are flooded and damaged as a result of heavy rain and flood events and discuss mitigation options with property owners.</p>	<p>1. No Progress</p> <p>2. Challenges have been with staff capability and resources.</p>	<p>1. Include</p> <p>2. The Village will maintain a log of properties by address/block/lot that are flooded and damaged as a result of heavy rain and flood events and discuss mitigation options with property owners.</p> <p>3. N/A</p>
New Square – 2	Update Village Codes	All Hazards	Village Building Department	<p>Structures in the Village that were built before codes and standards need to be brought to code.</p> <p>Work with property owners to bring structures built before codes and standards to code, which will provide increased protection from natural hazards.</p>	<p>1. No Progress</p> <p>2. Challenges have been property owner participation.</p>	<p>1. Include</p> <p>2. The Village will work with property owners to bring structures built before codes and standards to code, which will provide increased protection from natural hazards.</p> <p>3. N/A</p>
New Square – 3	Basin Capacity Upgrades	Flood, Severe Storm, Nor'easter	Town of Ramapo DPW, Village	<p>Many of the stormwater catch basins in the Village are undersized and causes flooding.</p> <p>Work with the Town of Ramapo Department of Public Works to rebuild and increase the capacity of all stormwater catch basins in the Village (e.g., Washington Ave) to reduce flooding.</p>	<p>1. No Progress</p> <p>2. Challenges have been coordination with Town of Ramapo and Village staff availability.</p>	<p>1. Include</p> <p>2. Work with the Town of Ramapo Department of Public Works to rebuild and increase the capacity of all stormwater catch basins in the Village (e.g., Washington Ave) to reduce flooding.</p> <p>3. N/A</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
New Square – 4	Pascack Brook Debris Removal	All Hazards	Village Board, Town of Ramapo, County	<p>There is debris and garbage in the Pascack River that causes flooding in the Village.</p> <p>Remove all garbage, debris and fallen trees in the Pascack Brook from the intersection to alleviate flooding.</p>	<p>1. No Progress 2. A challenge has been staff availability and funding.</p>	<p>1. Include 2. Remove all garbage, debris and fallen trees in the Pascack Brook from the intersection to alleviate flooding. 3. N/A</p>
New Square – 5	Critical Facility Back-Up Power	All Hazards	Village Emergency Manager	<p>Lack of backup power and emergency fuel supply in the Village for use during power outages and emergencies.</p> <p>Ensure continuity of operations in the Village after a natural hazard event.</p> <p>1. Purchase and install generators and lighting towers to provide backup power and illumination for public safety. These would be used at the schools, shelter, synagogue and other areas and locations throughout the Village. 2. Maintain extra fuel supply for the generators and lighting towers to ensure their operation post-event.</p>	<p>1. No Progress 2. A challenge has been funding availability.</p>	<p>1. Include 2. Ensure continuity of operations in the Village after a natural hazard event. The Village will complete two tasks. First, purchase and install generators and lighting towers to provide backup power and illumination for public safety. These would be used at the schools, shelter, synagogue and other areas and locations throughout the Village. Second, maintain extra fuel supply for the generators and lighting towers to ensure their operation post-event. 3. N/A</p>
New Square – 6	Emergency Supplies	All Hazards	Village Emergency Manager	<p>The Village currently does not have medical supplies to provide to residents in the event of a disaster or emergency.</p> <p>Purchase needed medical supplies, such as blankets, to provide residents post-event.</p>	<p>1. No Progress 2. A challenge has been funding availability.</p>	<p>1. Include 2. Purchase needed medical supplies, such as blankets, to provide residents post-event. 3. N/A</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
New Square – 7	Medical Emergency Response Vehicle	All Hazards	Village Emergency Manager	The Village is in need of a MERV to respond to emergencies in the municipality. Purchase a medical emergency response vehicle (MERV) equipped with supplies to respond to emergencies.	1. No Progress 2. A challenge has been funding availability.	1. Include 2. Purchase a medical emergency response vehicle (MERV) equipped with supplies to respond to emergencies. 3. N/A
New Square – 8	Comprehensive Plan Update	All Hazards	County Planning, Village Board	The current comprehensive plan does not incorporate natural disaster mitigation techniques. Update the comprehensive plans to include the entire Village and incorporate natural disaster mitigation techniques; a courtesy review or draft plans by the County Planning Department.	1. Completed 2. The Village Comprehensive Plan was updated in 2022. Adopted November 2022.	1. Discontinue 2. N/A 3. Completed
New Square – 9	Flood Prone Roadways	Flood, Severe Storm, Nor'easter	County DPW, Village Engineer	The Village needs to identify mitigation solutions for flood prone roadways in the Village. Develop specific mitigation solutions for flood prone road systems (roads, bridges, intersections, drainage, etc.) under the leadership of County DPW. - Washington Avenue repair/replacement of drainage pipe and increase capacity to reduce flooding.	1. In Progress 2. The Village has identified a flood prone roadway in the Village and developed mitigation actions to take	1. Include 2. The Village will implement specific mitigation solutions for Washington Avenue, such as repair/replacement of drainage pipe and increase capacity to reduce flooding on this flood prone roadway 3. N/A

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
New Square – 10	Emergency Response Plan Review	All Hazards	Village Building Inspector, Village Board	<p>The current emergency response plans do not implement monitoring or warning systems.</p> <p>Review existing emergency response plans for enhancement opportunities: work with social support agencies, homeowners' associations and general public to develop and implement monitoring and warning systems focused on vulnerable populations and provision of adequate shelter facilities.</p>	<p>1. No Progress</p> <p>2. A challenge has been staff availability and coordination.</p>	<p>1. Include</p> <p>2. Review existing emergency response plans for enhancement opportunities: work with social support agencies, homeowners' associations and general public to develop and implement monitoring and warning systems focused on vulnerable populations and provision of adequate shelter facilities.</p> <p>3. N/A</p>
New Square – 11	Update Village Codes	All Hazards	Village Building Inspector, Village Board	<p>The building and zoning codes do not currently include hazards of concern identified in the HMP.</p> <p>Update the building and zoning code and review with the identified hazards of concern in the updated Hazard Mitigation Plan to address and reduce potential future risk.</p>	<p>1. In Progress</p> <p>2. Proposed local law amending zoning was issued and a notice of hearing in February 2023.</p>	<p>1. Discontinue</p> <p>2. N/A</p> <p>3. Currently in progress, proposed local law amending zoning was issued and a notice of hearing on February 6, 2023.</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
New Square – 12	NFIP Capabilities	Flood, Severe Storm, Nor'easter	Village Building Inspector/Floodplain Administrator	<p>The Village has been suspended from the National Flood Insurance Program (NFIP) (sanctioned date 3/4/14; one day after the last flood maps became effective). This is according to FEMA: https://www.fema.gov/cis/NY.html</p> <p>The Village of New Square will continue to develop their NFIP administration program to rejoin the NFIP and join the Community Rating System (CRS).</p>	<ol style="list-style-type: none"> 1. No Progress 2. A challenge has been staff availability and funding. 	<ol style="list-style-type: none"> 1. Include 2. The Village of New Square will continue to develop their NFIP administration program to ensure compliance with the NFIP and join CRS. 3. N/A

Proposed Hazard Mitigation Initiatives for the HMP Update

New Square participated in the mitigation strategy workshop for this HMP to identify appropriate actions to include in a local hazard mitigation strategy. Its comprehensive consideration of all possible activities to address hazards of concern included review of the following FEMA documents:

- FEMA 551 “Selecting Appropriate Mitigation Measures for Floodprone Structures” (March 2007)
- FEMA “Mitigation Ideas—A Resource for Reducing Risk to Natural Hazards” (January 2013).

The action worksheets included at the end of this annex list the mitigation actions that New Square would like to pursue in the future to reduce the effects of hazards. The actions are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in the Village’s priorities.

Table 9.12-18 indicates the range of proposed mitigation action categories. The four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table to further demonstrate the wide range of activities and mitigation measures selected.

Volume I identifies 14 evaluation criteria for prioritizing the mitigation actions. To assist with rating each mitigation action as high, medium, or low priority, a numeric rank is assigned (-1, 0, or 1) for each of the evaluation criteria. Table 2-19 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Table 9.12-18. Analysis of Mitigation Actions by Hazard and Category

Hazard	Actions That Address the Hazard, by Action Category									
	FEMA				CRS					
	LPR	SIP	NSP	EAP	PR	PP	PI	NR	SP	ES
Dam Failure	2	1	-	2	1	-	-	-	-	4
Disease Outbreak	2	1	-	2	1	-	-	-	-	4
Drought	2	1	-	2	1	-	-	-	-	4
Earthquake	2	1	-	2	1	-	-	-	-	4
Extreme Temperature	2	1	-	2	1	-	-	-	-	4
Flood	3	2	1	3	1	-	2	1	1	4
Landslide	2	1	-	2	1	-	-	-	-	4
Severe Weather	3	2	1	3	1	-	2	1	1	4
Severe Winter Weather	2	1	-	2	1	-	-	-	-	4
Wildfire	2	1	-	2	1	-	-	-	-	4

Local Plans and Regulations (LPR)—These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.

Structure and Infrastructure Project (SIP)—These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct structures to reduce the impact of hazards.

Natural Systems Protection (NSP)—These are actions that minimize damage and losses and preserve or restore the functions of natural systems.

Education and Awareness Programs (EAP)—These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities

Preventative Measures (PR)—Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.

Property Protection (PP)—These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.

Public Information (PI)—Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.

Natural Resource Protection (NR)—Actions that minimize hazard loss and preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.

Structural Flood Control Projects (SP)—Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.

Emergency Services (ES)—Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities

Table 9.12-19. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Other Community Objectives	Total	High / Medium / Low
2024-New SquareV-01	Flood Damaged Properties	1	1	1	0	0	1	0	1	1	1	1	1	1	1	11	High
2024-New SquareV-02	Update Village Codes	1	1	1	1	1	0	1	1	1	1	1	1	1	1	13	High
2024-New SquareV-03	Basin Capacity Upgrades	1	1	1	0	0	0	1	1	0	1	1	1	1	1	10	Medium
2024-New SquareV-04	Pascack Brook Debris Removal	1	1	1	0	0	0	1	1	0	1	1	1	1	1	10	Medium
2024-New SquareV-05	Critical Facility Back-Up Power	1	1	1	1	0	0	0	1	1	1	1	1	1	1	11	High
2024-New SquareV-06	Emergency Supplies	1	1	1	0	1	0	0	1	1	1	1	1	1	1	11	High
2024-New SquareV-07	Medical Emergency Response Vehicle	1	1	1	0	1	0	0	1	1	1	1	1	1	1	11	High
2024-New SquareV-08	Emergency Response Plan Review	1	1	1	1	1	1	0	1	1	1	1	1	1	1	13	High
2024-New SquareV-09	NFIP Capabilities	1	1	1	1	1	1	0	1	1	1	1	1	1	1	13	High

Note: Volume I, Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14).

Action 2024-New SquareV-01. Flood Damaged Properties

Action Name:	2024-New SquareV-01. Flood Damaged Properties		
Description of the Problem:	The Village currently does not have a list of properties that have been flooded and/or damaged as a result of heavy rain and flooding events. It cannot assess trends or changes in vulnerability to properties in areas that as susceptible to flooding and severe storms.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The Village will maintain a log of properties by address/block/lot that are flooded and damaged because of heavy rain and flood events and discuss mitigation options with property owners.		
Lead Agency:	Village Building Department and Emergency Manager		
Supporting Agencies:	N/A		
Estimated Cost:	Low (< \$10,000)		
Potential Funding Sources:	BRIC, FMA, HMGP, match from property owners		
Implementation Timeline:	Short Term (<5 years)		
Goals Met:	1, 2, 3, 5, 7		
Benefits:	High (> \$100,000)		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	Collecting data regarding homeowners that reside within flood prone areas provides an opportunity to introduce location-specific opportunities for assistance.		
Impact on Critical Facilities/Lifelines:	Mitigating homes located in the repetitive loss area decreases the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.		
Impact on Capabilities	N/A		
Impact on Future Development:	Increased outreach to homeowners within a flood prone area will limit construction in areas that are prone to hazard events.		
Climate Change Considerations:	Climate change is likely to increase the frequency and severity of severe rainfall, flash flooding, riverine flooding, and coastal flooding from sea level rise and storm surge events. Mitigating structures in the floodplain will reduce the response and recovery costs as a result of these events and decrease the loss of human life as a result of these events.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low

Alternatives	Action	Evaluation
	No action.	Problem continues.
	Levee around floodplain	Costly, not enough room
	Deployable flood barriers	Requires deployment. Residents may not have adequate time to deploy, especially those who are elderly or disabled.

Action 2024-New SquareV-02. Update Village Codes

Action Name:	2024-New Square-02. Update Village Codes	
Description of the Problem:	Many of the Village’s codes do not incorporate hazard mitigation principles or up-to-date information on the hazards it is exposed to, which including the following: dam/levee failure, disease outbreak, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, and wildfire.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	The Village will update codes and standards to integrate findings from this HMP update to reduce potential damage and adverse impacts following hazard events.	
Lead Agency:	Village Building Department	
Supporting Agencies:	N/A	
Estimated Cost:	Low (< \$10,000)	
Potential Funding Sources:	Municipal Budget	
Implementation Timeline:	Short Term (<5 years)	
Goals Met:	1, 2, 3, 5, 7	
Benefits:	Medium (\$10,000 to \$100,000)	
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	N/A	
Impact on Critical Facilities/Lifelines:	Updating the Village code will help critical facilities and lifelines be more resilient to impacts and can continue to function properly for the wellbeing of the community.	
Impact on Capabilities	N/A	
Impact on Future Development:	An updated Village code will help plan for future development in being more resilient to natural disaster and other hazard events.	

Climate Change Considerations:	The updated Village code will consider climate change impacts when looking at ways to mitigate natural disaster events. This will limit climate change impacts on the community.		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	Do nothing.		Problem continues.
	Amend Village code to not include hazard mitigation.		Problem continues.
	Amend Village code without considering all hazards and climate change projections.		Older structures and critical facilities may not be protected against future disasters.

Action 2024-New SquareV-03. Basin Capacity Upgrades

Action Name:	2024-New SquareV-03. Basin Capacity Upgrades	
Description of the Problem:	Many of the stormwater catch basins in the Village are undersized and causes flooding.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	Work with the Town of Ramapo Department of Public Works to rebuild and increase the capacity of all stormwater catch basins in the Village (e.g., Washington Ave) to reduce flooding.	
Lead Agency:	Town of Ramapo DPW	
Supporting Agencies:	Village	
Estimated Cost:	Low (< \$10,000)	
Potential Funding Sources:	HMGP, BRIC, operating budget	
Implementation Timeline:	Short Term (<5 years)	
Goals Met:	2	
Benefits:	High (> \$100,000)	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Areas that were previously vulnerable to frequency or severe flooding events will be less likely to be impacted by flooding events.	
Impact on Critical Facilities/Lifelines:	This action would protect critical roadways and ensure standard of operations for emergency responders during a disaster event.	
Impact on Capabilities	This action would strengthen capabilities for the Village during and after a disaster event by mitigating flooding impacts throughout the Village.	

Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.		
Climate Change Considerations:	Climate change is likely to result in more frequent and severe rainfall events. This action upsizes drainage basins to meet changing stormwater needs as the result of climate change.		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action	Evaluation	
	Do nothing.	Problem continues.	
	Raise roadways.	Not feasible, overtopping of catch basins still occur.	
	Elevate residential homes.	Not feasible, lack of public support, overtopping of catch basins still occur.	

Action 2024-New SquareV-04. Pascack Brook Debris Removal

Action Name:	2024-New SquareV-04		
Description of the Problem:	There is debris and garbage in the Pascack River that causes flooding in the Village.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	Remove all garbage, debris and fallen trees in the Pascack Brook from the intersection to alleviate flooding.		
Lead Agency:	Village Board		
Supporting Agencies:	Town of Ramapo, County		
Estimated Cost:	Low (< \$10,000)		
Potential Funding Sources:	Municipal budget		
Implementation Timeline:	Short Term (< 5 years)		
Goals Met:	1, 2, 3, 4, 5, 6, 7		
Benefits:	High (> \$100,000)		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input checked="" type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input checked="" type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	This action would provide flood mitigation for socially vulnerable populations who reside near the Pascack River and are unable to provide debris cleanup themselves.		
Impact on Critical Facilities/Lifelines:	This action would re-establish natural flood mitigation within the Village by restoring the functions of the brook.		

Impact on Capabilities	By restoring the brook, it would allow for further flood mitigation capabilities within the Village.		
Impact on Future Development:	N/A		
Climate Change Considerations:	Climate change will affect flooding concerns within the Village. By restoring the natural flood processes of the brook, a sustainable flood mitigation practice is established to lessen impacts from climate change.		
Priority: Check one	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	Do nothing.		Problem continues and/or worsens.
	Construct flood wall.		Costly, does not sustainably solve the problem.
	Deploy temporary flood barriers.		Costly, short-term solution, does not solve the problem.

Action 2024-New SquareV-05. Critical Facility Back-Up Power

Action Name:	2024-New SquareV-05. Critical Facility Back-Up Power	
Description of the Problem:	The Village does not have a source of backup power or emergency fuel supplies to use during power outages or other emergencies that require additional power usage, such as sheltering needs during a flood caused by a dam/levee failure, severe storm, severe winter storm, earthquake, landslide, or wildfire; standing up cool or heating centers during extreme temperature events or droughts; or expanding medical and healthcare services during a disease outbreak.	
Hazard(s) of Concern: Check all that apply	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	Ensure continuity of operations in the Village after a natural hazard event. The Village will: <ul style="list-style-type: none"> • Purchase and install generators and lighting towers to provide backup power and illumination for public safety. These would be used at the schools, shelter, synagogue and other areas and locations throughout the Village. • Maintain extra fuel supply for the generators and lighting towers to ensure their operation post-event. 	
Lead Agency:	Village Emergency Manager	
Supporting Agencies:	N/A	
Estimated Cost:	High (> \$100,000)	
Potential Funding Sources:	FEMA HMGP and BRIC, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Municipal Budget	
Implementation Timeline:	Short Term (<5 years)	

Goals Met:	1, 2		
Benefits:	High (> \$100,000)		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	Protection of critical facilities provides an opportunity for first responders, utility workers, and emergency managers to stage and deploy resources to vulnerable and hazard prone areas.		
Impact on Critical Facilities/Lifelines:	This action protects public health and safety and ensures continued operation of a critical facility and its essential functions during a power outage.		
Impact on Capabilities	This action ensures continuity of operations to maintain capabilities.		
Impact on Future Development:	This action results in protection of a critical facility that could support future development.		
Climate Change Considerations:	Climate change is likely to increase severe weather events such as flooding, wind, and extreme temperatures that result in power failures. This action accounts for a likely increase in power failure events.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No Action		Problem continues.
	Microgrid		Costly and difficult to implement.
	Solar panels and battery backup		Solar power is unlikely to be able to provide battery power for extended power failure events.

Action 2024-New SquareV-06. Emergency Supplies

Action Name:	2024-NewSquareV-06. Emergency Supplies		
Description of the Problem:	The Village currently does not have medical supplies to provide healthcare to residents if they are injured or harmed during a dam/levee failure, disease outbreak, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, or wildfire.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire	
Description of the Solution:	Purchase needed medical supplies, such as blankets, to provide residents post-event.		
Lead Agency:	Village Emergency Manager		

Supporting Agencies:	N/A		
Estimated Cost:	Medium (\$10,000 to \$100,000)		
Potential Funding Sources:	Grant funding where available.		
Implementation Timeline:	Short Term (< 5 years)		
Goals Met:	1, 2, 3, 4, 5, 6, 7		
Benefits:	High (> \$100,000)		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR)	<input type="checkbox"/> Natural Systems Protection (NSP)	
	<input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input checked="" type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR)	<input type="checkbox"/> Natural Resource Protection (NR)	
	<input type="checkbox"/> Property Protection (PP)	<input type="checkbox"/> Structural Flood Control Projects (SP)	
	<input type="checkbox"/> Public Information (PI)	<input checked="" type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	This action would provide supplies to socially vulnerable populations after a disaster events.		
Impact on Critical Facilities/Lifelines:	This action would strengthen and support the function of emergency centers during the time of a disaster event.		
Impact on Capabilities	This action would support the Village’s capabilities to provide response measures during and after a disaster event.		
Impact on Future Development:	N/A		
Climate Change Considerations:	N/A		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	Do nothing.		Community is left without supplies, problem persists.
	Rely on non-profits to supply needs.		Risk of max capacity during disaster event, limited resources.
	Rely on federal supplies.		Not an option.

Action 2024-New SquareV-07. Medical Emergency Response Vehicle

Action Name:	2024-New SquareV-07. Medical Emergency Response Vehicle (MERV)
Description of the Problem:	The Village needs a MERV to respond to emergencies in the municipality that may be triggered by dam/levee failure, disease outbreaks, droughts, earthquakes, extreme temperature events, floods, landslides, severe storms, severe winter storms, or wildfires.

Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	Purchase a MERV equipped with supplies to respond to emergencies.	
Lead Agency:	Village Emergency Manager	
Supporting Agencies:	N/A	
Estimated Cost:	Medium (\$10,000 to \$100,000)	
Potential Funding Sources:	Grant funding where available.	
Implementation Timeline:	Short Term (< 5 years)	
Goals Met:	1, 2, 3, 4, 5, 6, 7	
Benefits:	High (> \$100,000)	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	By having a MERV, first responders would be able to assist the socially vulnerable (such as elderly, disabled, etc.) during a disaster event.	
Impact on Critical Facilities/Lifelines:	A MERV would lessen the impact on critical facilities such as hospitals, etc. during a disaster event by delivering medical supplies and needs out in the field.	
Impact on Capabilities	A MERV would strengthen the Village’s capabilities to provide emergency response in the community.	
Impact on Future Development:	N/A	
Climate Change Considerations:	N/A	
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium
Alternatives	Action	Evaluation
	Do nothing.	Problem continues.
	Rely on ambulance and hospitals to administer needs.	Risk of max capacity during disaster events.
	Rely on non-profits to administer needs.	Possibility for lack of resources and capacity.

Action 2024-New SquareV-08. Emergency Response Plan Review

Action Name:	2024-New SquareV-08. Emergency Response Plan Review		
Description of the Problem:	The current emergency response plans do not implement monitoring or warning systems to support the Village’s preparedness and response to dam/levee failure, disease outbreaks, droughts, earthquakes, extreme temperature events, floods, landslide, severe storms, severe winter storms, or wildfires.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire	
Description of the Solution:	Review existing emergency response plans for enhancement opportunities: work with social support agencies, homeowners’ associations and general public to develop and implement monitoring and warning systems focused on vulnerable populations and provision of adequate shelter facilities.		
Lead Agency:	Village Building Inspector, Village Board		
Supporting Agencies:	N/A		
Estimated Cost:	Low (< \$10,000)		
Potential Funding Sources:	Grant funding where available.		
Implementation Timeline:	Short Term (< 5 years)		
Goals Met:	1, 2, 3, 4, 5, 6, 7		
Benefits:	High (> \$100,000)		
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	Updates to the Emergency Response Plan will help guide efforts in creating shelter facilities and warning systems to assist vulnerable populations during and after a disaster event occurs.		
Impact on Critical Facilities/Lifelines:	This action will provide guidance for establishing adequate shelter facilities, further growing the Village’s critical facilities available to the community.		
Impact on Capabilities	This action will strengthen the Village’s emergency response procedure and capabilities.		
Impact on Future Development:	N/A		
Climate Change Considerations:	N/A		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low

Alternatives	Action	Evaluation
	No action.	Emergency Response Plan out of date, problem continues.
	Rely on non-profits to address emergency response for vulnerable populations	Possibility for lack of resources and capacity.
	Rely on state emergency response plan procedures.	Not locally specific, problem still continues.

Action 2024-New SquareV-09. NFIP Capabilities

Action Name:	2024-New SquareV-09. NFIP Capability	
Description of the Problem:	Previously, the Village was suspended from the NFIP (sanctioned date 3/4/14; one day after the last flood maps became effective). Coming into compliance with the NFIP will help protect the Village’s residents and properties from future flood damage by requiring updated local codes and regulations.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Village of New Square will continue to develop their NFIP administration program to ensure compliance with the NFIP and join the Community Rating System (CRS).	
Lead Agency:	Village Building Inspector/Floodplain Administrator	
Supporting Agencies:	N/A	
Estimated Cost:	Low (< \$10,000)	
Potential Funding Sources:	Grant funding where available.	
Implementation Timeline:	Short Term (< 5 years)	
Goals Met:	1, 2, 3, 4, 5, 6, 7	
Benefits:	High (> \$100,000)	
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	By coming into compliance the NFIP program and joining the CRS program, the Village will be eligible for flood mitigation assistance and flood insurance premium reductions which would benefit low-income populations located in the floodplain.	
Impact on Critical Facilities/Lifelines:	This action would assist in flood mitigation practices and funding opportunities for critical facilities within the Village to ensure standards of operations during a disaster event.	
Impact on Capabilities	This action would strengthen the Village’s flood mitigation capabilities and open the door for more flood mitigation opportunities for the community.	
Impact on Future Development:	N/A	

Climate Change Considerations:	By coming into compliance with the NFIP program and being a CRS community, climate change considerations will be incorporated into the Village’s mitigation planning efforts to ensure resilience for the future.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action.		Problem continues.
	Only join CRS program.		Lack of NFIP opportunities and resources.
	Only come into compliance with NFIP program.		Miss opportunity to have reduced flood insurance premiums for community, lack of flood mitigation resources and assistance.

SECTION 9. JURISDICTIONAL ANNEXES

9.13 VILLAGE OF NYACK

This jurisdictional annex to the Rockland County Hazard Mitigation Plan (HMP) provides information to assist public and private sectors in the Village of Nyack with reducing losses from future hazard events. This annex is not guidance of what to do when a disaster occurs; its focus is on actions that can be implemented prior to a disaster to reduce or eliminate damage to property and people. The annex presents a general overview of the Village of Nyack, describes who participated in the planning process, assesses the Village’s risk, vulnerability, and capabilities, and outlines a strategy for achieving a more resilient community.

9.13.1 Hazard Mitigation Planning Team

The Village of Nyack identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Village departments. The Village Administrator represented the community on the Rockland County HMP Planning Partnership and Steering Committee and supported the local planning process requirements by securing input from persons with specific knowledge to enhance the plan. All departments were asked to contribute to the annex development through reviewing and contributing to the capability assessment, reporting on the status of previously identified actions, and participating in action identification and prioritization.

Table 9.13-1 summarizes Village officials who participated in the development of the annex and in what capacity. Additional documentation of the Village’s planning activities through Planning Partnership meetings is included in Volume I.

Table 9.13-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Andy Stewart, Village Administrator Address: 9 N. Broadway, Nyack, NY 10960 Phone Number: 845-358-3581 Email: administrator@nyack-ny.gov	Name/Title: Jonathan Abrams, DPW Foreman Address: 9 N. Broadway, Nyack, NY 10960 Phone Number: 845-358-3552 Email: dpw@nyack.ny.gov
National Flood Insurance Program Floodplain Administrator	
Name/Title: Robert Galvin, Village Planner Address: 9 N. Broadway, Nyack, NY 10960 Phone Number: 845-358-0548 Email: marketstat@aol.com	

9.13.2 Municipal Profile

The Village of Nyack is located within the Town of Orangetown, with a small portion located within the Town of Clarkstown, along the western border of Rockland County. The Village is bordered to the north by the Village of Upper Nyack, to the east by the Town of Clarkstown, and to the west by the Hudson River. According to the U.S. Census, the 2020 population for the Village of Nyack was 7,265, a 7.4 percent increase from the 2010 Census.

Research has shown that some populations are at greater risk from hazard events because of decreased resources or physical abilities. These populations can be more susceptible to hazard events based on a number of factors

including their physical and financial ability to react or respond during a hazard, and the location and construction quality of their housing. Data from the 2022 American Community Survey Five-year Population Estimates indicates that 4.8 percent of the population is five years of age or younger, 20.8 percent is 65 years of age or older, 3.6 percent is non-English speaking, 3.9 percent is below the poverty threshold, and 11.8 percent is considered disabled.

9.13.3 Jurisdictional Capability Assessment and Integration

The Village of Nyack performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Volume I describes the components included in the capability assessment and their significance for hazard mitigation planning. The jurisdictional assessment for this annex includes analyses of the following:

- Planning and regulatory capabilities
- Development and permitting capabilities
- Administrative and technical capabilities
- Fiscal capabilities
- Education and outreach capabilities
- Classification under various community mitigation programs
- Adaptive capacity to withstand hazard events

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into day-to-day local government operations. As part of the hazard mitigation analysis, planning and /policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress toward plan integration. Development of an updated mitigation strategy provided an opportunity for the Village of Nyack to identify opportunities for integration of mitigation concepts that can be incorporated into municipal procedures.

Planning, Legal, and Regulatory Capability and Integration

Table 9.13-2 summarizes the regulatory tools that are available to Nyack.

Table 9.13-2. Planning, Legal, and Regulatory Capability and Integration

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Codes, Ordinances, & Regulations				
Building Code	Yes	NYS Building Code & Chapter 140, 176, 196	State and Local	Building
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The NYS Building Code is intended to establish provisions that adequately protect public health, safety, and welfare through the minimum requirements for building systems using prescriptive and performance-related provisions. It is founded on broad-based principles that make possible the use of new materials and new building designs. The 2020 edition is an update to the 2018 edition published by the ICC. It is part of the Uniform Fire Prevention and Building Code.				
Zoning/Land Use Code	Yes	Section 360	Local	Building
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The Zoning Ordinance implements the goals and objectives of the Comprehensive Plan.				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Subdivision Code	Yes	Chapter 360, Section 5.8	Local	Building
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Subdivisions Ordinance requires measures and reviews to prevent building that would impair flood hazard areas.				
Site Plan Code	Yes	Chapter 360, Section 5.7	Local	Building, Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Subdivisions Ordinance requires measures and reviews to prevent building that would impair flood hazard areas.				
Stormwater Management Code	Yes	Chapter 295, Chapter 360, Section 4.12	Local	Building and Brooker Engineering
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The purpose of chapter 295 is to establish minimum stormwater management requirements and controls to protect and safeguard the general health, safety, and welfare of the public within the Village.				
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Real Estate Disclosure	Yes	New York State (NYS) mandate, Property Condition Disclosure Act, NY Code – Article 14 §460-467	State and Local	NYS Department of State
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> In addition to facing potential liability for failing to disclose under the exceptions to “caveat emptor,” a home seller must make certain disclosures under the law or pay a credit of \$500 to the buyer at closing. While the PCDA requires a seller to complete a standardized disclosure statement and deliver it to the buyer before the buyer signs the final purchase contract, in practice, most home sellers in New York opt not to complete the statement and instead pay the credit.				
Growth Management	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Environmental Protection Ordinance(s)	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Flood Damage Prevention Ordinance	Yes	FEMA Regulations	Federal, State, Local	Building
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The ordinance promotes the public health, safety and general welfare and to minimize public and private losses due to flood conditions in specific areas.				
Wellhead Protection	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Emergency Management Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Climate Change Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Other: Freeboard	Yes	State mandated BFE+2 for single and two-family residential construction, BFE+1 for all other construction types	State and Local	Building
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> A freeboard of two feet shall be added where the design flood elevation or other elevation requirements are specified. A freeboard shall not be required where it is not possible to obtain a design flood elevation from the FIRM or from any method established above and the design flood elevation is three feet above the highest adjacent grade.				
Other: Cumulative Substantial Damage	Yes	FEMA Regulations	State and Local	Building
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Village tracks over a period of time cumulative damages to determine if a building is being substantially improved or not. This code assists with compliance of local flood protection standards within the Village.				
Other: Municipal Separate Storm Sewer System (MS4)	Yes	Chapter 294, 295 and 360 Section 4.12	State and Local	Brooker Engineering, Building
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> MS4 system within the Village is a collection of stormwater systems such as ditches, retention basin, road gutters, etc. which mitigation flooding seen in the Village. This code regulates and maintains those stormwater systems within the Village.				
Other: Natural Resource Protection	Yes	Chapter 360 — 4.4 Natural and Scenic Resource Protection (steep slopes, wetlands); chapter 360 -4.14 - Sustainability	Local	Building, Sustainability Coordinator, Planner
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> This code regulates, protects, and maintains the natural resources located within the Village.				
Planning Documents				
General/Comprehensive Plan	Yes	Village of Nyack Comprehensive Plan, 2016	Local	Village Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Village Comprehensive Plan guides future actions and development for the Village.				
Capital Improvement Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Disaster Debris Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Floodplain Management or Watershed Plan	Yes	Chapter 205	Federal and Local	Building
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Floodplain Management Plan regulates and guides safe floodplain management practices within the Village.				
Stormwater Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Open Space Plan	Yes	Village of Nyack Comprehensive Plan, 2016	Local	Village Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Village Comprehensive Plan includes guidance on planning, development, and management of public open spaces.				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Urban Water Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Habitat Conservation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Economic Development Plan	Yes	Village of Nyack Comprehensive Plan, 2016	Local	Village Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Village Comprehensive Plan includes guidance on strategic economic development planning through partnerships between the Village, businesses, and NGOs.				
Community Wildfire Protection Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Community Forest Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Transportation Plan	Yes	Village of Nyack Comprehensive Plan, 2016 and TAP Plan (Broadway)	Local	Village Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Village Comprehensive Plan includes guidance on long-term transportation planning and goals for the Village.				
Agriculture Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Climate Action/ Resiliency/Sustainability Plan	Yes	Nyack Climate Action Plan – Nyack 2030	Local	Sustainability Coordinator
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Nyack is developing a roadmap for climate action with a set of goals and milestones for reducing greenhouse gas emissions and adapting to climate change by 2030. Input from a broad cross section of the community will shape the plan, starting with a public workshop to be held in March. This \$40,000 project has been funded in part by The Climate Smart Community Grant Program, Title 15 of the Environmental Protection Fund through the NYS Department of Environmental Conservation.”				
Tourism Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Business/ Downtown Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other (for example NYRCR, etc.)	Yes	Local Waterfront Revitalization Program, Harbor Management Plan, 2021 - 19 NYCRR Part 603	Local	Village Board and BFJ Consultants
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> This plan regulates and maintains harbor management for the Village.				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Response/Recovery Planning				
Comprehensive Emergency Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Continuity of Operations Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Substantial Damage Response Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Threat & Hazard Identification & Risk Assessment	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Post-Disaster Recovery Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Public Health Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other		-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

Development and Permitting Capability

Table 9.13-3 summarizes the capabilities of Nyack to oversee and track development.

Table 9.13-3. Development and Permitting Capability

Indicate if your jurisdiction implements the following	Yes/No	Comment:
Do you issue development permits?	Yes	-
<ul style="list-style-type: none"> If you issue development permits, what department is responsible? If you do not issue development permits, what is your process for tracking new development? 	N/A	The Village Building Department is responsible for issuing development permits and tracking new development.
Are permits tracked by hazard area? (For example, floodplain development permits.)	No	-
Do you have a buildable land inventory?	No	-
<ul style="list-style-type: none"> If you have a buildable land inventory, please describe 		
Describe the level of build-out in your jurisdiction.	N/A	-

Administrative and Technical Capability

Table 9.13-4 summarizes potential staff and personnel resources available to Nyack and their current responsibilities that contribute to hazard mitigation.

Table 9.13-4. Administrative and Technical Capabilities

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
<i>Administrative Capability</i>		
Planning Board	Yes	<p>The Planning Board helps to shape how the community will look and feel for residents, business owners, and visitors. It serves two important functions. First it reviews "Site Plans" for proposed construction or alteration of many parcels of real property. Second, it decides whether a particular parcel in the village can and should be sub-divided.</p> <p>In making these decisions, the Planning Board is guided by Village Code regulations as related to land use as well as its sense of the lot and the community. Nyack has adopted a Comprehensive Master Plan, which sets forth the general vision of the village in the future.</p>
Zoning Board of Adjustment	Yes	<p>Pursuant to the provisions of Section 7-712-b of the New York State Village Law, the Village of Nyack maintains a Zoning Board of Appeals consisting of five members and two alternate members appointed by the Village Board. All members serve on a volunteer basis.</p> <p>The Zoning Board of Appeals hears and decide appeals from any order, requirement, decision, interpretation, or determination of the Building Inspector, the Planning Board, and the Architectural Review Board. Such appeals fall into two categories: those seeking "interpretations" of the zoning code and those seeking "variances" from the code. In addition, the Board is empowered to grant special use permits in certain instances as defined in the Zoning Code.</p>
Planning Department	Yes	<p>The Village Planner works closely with the Building Department and Village Engineer in reviewing all new project applications submitted for approval to the Architectural Review Board, Planning Board, and Zoning Board of Appeals. The Village Planner is also responsible for ensuring that State and Federal requirements are followed during the review process and that the Boards have all the information they need to be able to make an informed decision. Additionally, the Village Planner works on supporting economic development activities, grant making, drafting of zoning text changes and other planning studies and initiatives that will help improve the quality of life in the Village.</p>
Mitigation Planning Committee	No	-
Environmental Board/Commission	No	-
Open Space Board/Committee	No	-
Economic Development Commission/Committee	No	-

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
Public Works/Highway Department	Yes	The Village of Nyack Department of Public Works strives to keep the Village clean and well maintained, improve Village facilities and infrastructure while providing essential services to the residents of the Village in a prompt, courteous, efficient, and cost-effective manner. The Department works to enhance the quality of life for residents and visitors of the Village of Nyack.
Construction/Building/Code Enforcement Department	Yes	The Building Department is a resource for zoning, permits and other rules and regulations that pertain to new or pre-existing construction. Some of the areas that the Department can help with include building permit applications, zoning/planning rules and regulations, fire safety compliance, signage, property maintenance, property records, and tree permits.
Emergency Management/Public Safety Department	Yes	<p>The 100 percent volunteer Nyack Fire Department provides service to the Village of Nyack, Upper Nyack, and the hamlet of Upper Grand View. The District maintains six fire stations housing eight fire apparatus, one marine unit, and the high angle rescue team.</p> <p>The Village utilizes the Orangetown Police Department.</p> <p>The Nyack Community Ambulance Corps provides ambulatory services for the Village.</p>
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	Yes	The Village of Nyack Department of Public Works strives to keep the Village clean and well maintained, improve Village facilities and infrastructure while providing essential services to the residents of the Village in a prompt, courteous, efficient, and cost-effective manner.
Mutual aid agreements	Yes	Village of Nyack Fire Dept, Orangetown Police Dept
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	Yes	There are no job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk.
Other: Water Department	Yes	The Village of Nyack Water Department is a self-supporting, public benefit department. It is without taxing powers. The only revenue the Department receives is obtained from the sale of water. The Department is nonprofit. All revenue is used for operating expenses, outstanding debt, and construction purposes. The Department was established to provide the Village of Nyack’s service area with a safe and abundant supply of water.
Other: Nyack Climate Smart Committee	Yes	The Nyack Climate Smart Committee helps the Village government and the community address climate change. The committee has working groups on clean energy, recycling and waste, greener transportation, natural resources, and adapting to climate change impacts.
Other: Nyack Parks Commission	Yes	The Village of Nyack Parks Commission oversees the various park properties in Nyack, including the waterfront Memorial Park and the adjacent Nyack Marina. The Parks Commission, which acts in an advisory capacity to the Nyack Village Board, conducts its meetings in Village Hall on the last Wednesday of every month.

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
Other: Nyack Tree Committee	Yes	The Nyack Tree Committee organizes efforts to preserve and expand Nyack's village forest through careful planning, planting and maintenance. The Village of Nyack has been a Tree City USA since 2015. In 2016 the Committee organized the Nyack Tree Project –, the village's community planting and stewardship program. Twice a year, volunteers of all ages plant trees along Nyack's streets and in the park. Approximately 250 trees have been planted since the program started in 2016.
<i>Technical/Staffing Capability</i>		
Planners or engineers with knowledge of land development and land management practices	Yes	Planning Department - Village planner
Engineers or professionals trained in building or infrastructure construction practices	Yes	Eve Mancuso, PE Brooker Engineering
Planners or engineers with an understanding of natural hazards	Yes	Village Planner
Staff with expertise or training in benefit/cost analysis	Yes	Village Administrator, Treasurer, Village Planner
Professionals trained in conducting damage assessments	Yes	Brooker Engineering and Blue Shore Engineering
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	Yes	Village Planner - GIS
Environmental scientist familiar with natural hazards	No	-
Surveyor(s)	No	-
Emergency Manager	Yes	Village Administrator
Grant writer(s)	Yes	Contract grant writer Sylvia Welch, Ph.D.
Resilience Officer	No	-
Other (this could include stormwater engineer, environmental specialist, etc.)	Yes	The Sustainability Coordinator organizes the Village's participation in initiatives, including the NYS Climate Smart Communities and NYSERDA Clean Energy Communities programs, and supports collaboration among Village officials, departments, boards, committee, and community groups to advance the Village's sustainability agenda.

Fiscal Capability

Table 9.13-5 summarizes financial resources available to Nyack.

Table 9.13-5. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use? (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	Yes
Capital improvements project funding	Yes
Authority to levy taxes for specific purposes	Yes
User fees for water, sewer, gas, or electric service	Yes
Impact fees for homebuyers or developers of new development/homes	No
Stormwater utility fee	No

Financial Resources	Accessible or Eligible to Use? (Yes/No)
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	No
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	No
Other federal or state Funding Programs	Yes
Open Space Acquisition funding programs	No
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	No

Education and Outreach Capability

Table 9.13-6 summarizes the education and outreach resources available to Nyack.

Table 9.13-6. Education and Outreach Capabilities

Outreach Resources	Available? (Yes/No)	Comment:
Public information officer or communications office	No	-
Personnel skilled or trained in website development	Yes	Contracted
Hazard mitigation information available on your website	Yes	The Village of Nyack hosts a variety of information on its website for its residents. The Village’s website hosts multiple resources include planning documents, zoning codes, feasibility studies, etc. for residents to review. Residents also can register for alerts regarding health and safety, weather alerts, etc.
Social media for hazard mitigation education and outreach	No	-
Citizen boards or commissions that address issues related to hazard mitigation	No	-
Warning systems for hazard events	Yes	The County utilizes NY-Alert and CodeRed (the backup to NY-Alert) for emergency notifications (all Towns and Villages have access to it).
Natural disaster/safety programs in place for schools	No	-
Organizations that conduct outreach to socially vulnerable populations and underserved populations	No	-
Public outreach mechanisms / programs to inform citizens on natural hazards, risk, and ways to protect themselves during such events	Yes	-
If yes, please describe.		The Village of Nyack hosts a variety of information on its website for its residents. The Village’s website hosts multiple resources include planning documents, zoning codes, feasibility studies, etc. for residents to review. Residents also can register for alerts regarding health and safety, weather alerts, etc.

Community Classifications

Table 9.13-7 summarizes classifications for community programs available to Nyack.

Table 9.13-7. Community Classifications

Program	Participating? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	No	-	-
New York State Department of Environmental Conservation (NYSDEC) Climate Smart Community	Yes	Bronze	April 25, 2019
National Weather Service Storm Ready Certification	No	-	-
Firewise Communities classification	No	-	-
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable
 — = Unavailable

Adaptive Capacity

Adaptive capacity is defined as “the ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or respond to consequences” (IPCC, 2022). Each jurisdiction has a unique combination of capabilities to adjust to, protect from, and withstand a future hazard event, future conditions, and changing risk. Table 9.13-8 summarizes the adaptive capacity for each identified hazard of concern and the Village’s capability to address related actions using the following classifications:

- Strong: Capacity exists and is in use.
- Moderate: Capacity might exist; but is not used or could use some improvement.
- Weak: Capacity does not exist or could use substantial improvement.

Table 9.13-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Disease Outbreak	Moderate
Drought	Moderate
Earthquake	Moderate
Extreme Temperature	Moderate
Flood	Moderate
Landslide	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

9.13.4 National Flood Insurance Program Compliance

This section provides specific information on the management and regulation of the regulatory floodplain, including current and future compliance with the National Flood Insurance Program (NFIP). The floodplain administrator listed in Table 9.13-1 is responsible for maintaining this information.

NFIP Summary

Table 9.13-9 summarizes the NFIP statistics for Nyack.

Table 9.13-9. Village of Nyack NFIP Summary of Policy and Claim Statistics

# Policies	22
# Claims (Losses)	85
Total Loss Payments	\$2,497,954
# Repetitive Loss Properties (NFIP definition)	0
# Repetitive Loss Properties (FMA definition)	9
# Severe Repetitive Loss Properties	2
# Policies Within the 1 percent Annual Chance Flood Boundary	2

NFIP Definition of Repetitive Loss: The NFIP defines a repetitive loss property as any insurable building for which two or more claims of more than \$1,000 were paid by the NFIP within any rolling 10-year period since 1978.

FMA Definition of Repetitive Loss: FEMA’s Flood Mitigation Assistance (FMA) program defines a repetitive loss property as any insurable building that has incurred flood-related damage on two occasions, in which the cost of the repair, on average, equaled or exceeded 25 percent of the market value of the structure at the time of each such flood event.

Definition of Severe Repetitive Loss: A residential property covered under an NFIP flood insurance policy and: (a) That has at least four NFIP claim payments over \$5,000 each, and the cumulative amount of such claims payments exceeds \$20,000; or (b) For which at least two separate claims payments have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building. At least two of the claims must have occurred within any 10-year period, more than 10 days apart.

Source: FEMA, December 2023

Note: RL count may include properties also identified as SRL.

Flood Vulnerability Summary

Table 9.13-10 provides a summary of the NFIP program in the Village of Nyack.

Table 9.13-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	Clermont Condominiums - waterfront properties are prone to flooding in the area.
Do you maintain a list of properties that have been damaged by flooding?	No, the Village does not maintain a list at this time.
Do you maintain a list of property owners interested in flood mitigation?	No, the Village does not maintain a list at this time.
How many homeowners and/or business owners are interested in mitigation (elevation or acquisition)?	Unknown, at this time.
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what projects are underway.	No, there are no current RiskMAP projects underway at this time.
How do you make Substantial Damage determinations?	The Village makes Substantial Damage Determinations through the definition in Local Code 205-4 and by established construction standards in Local Code 205, Article V and the 2020 Uniform Code of NYS.
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	Unknown, at this time.
How many properties have been mitigated (elevation or acquisition) in your jurisdiction? • If there are mitigation properties, how were the projects funded?	None, at this time.

NFIP Topic	Comments
Do your flood hazard maps adequately address the flood risk within your jurisdiction? <ul style="list-style-type: none"> If not, state why. 	Yes, the flood maps adequately address flood risk within the Village.
NFIP Compliance	
What local department is responsible for floodplain management?	The Chief Building Inspector and Floodplain Administrator are responsible for floodplain management for the Village.
Are any certified floodplain managers on staff in your jurisdiction?	Yes, consulting group Brooker Engineering, PLLC are staff certified for the Village.
Do you have access to resources to determine possible future flooding conditions from climate change?	No, not at this time.
Does your floodplain management staff need any assistance or training to support its floodplain management program? <ul style="list-style-type: none"> If so, what type of assistance/training is needed? 	No, not at this time.
Provide an explanation of NFIP administration services you provide (e.g., permit review, GIS, education/outreach, inspections, engineering capability)	Permit review, GIS, education/outreach, inspections, engineering capability.
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	The Village determines substantial improvement qualification by definition in Local Law 205-4.
What are the barriers to running an effective NFIP program in the community, if any?	None, at this time.
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? <ul style="list-style-type: none"> If so, state the violations. 	None, at this time.
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	July 26, 2018
What is the local law number or municipal code of your flood damage prevention ordinance?	Municipal Code 205
What is the date that your flood damage prevention ordinance was last amended?	January 1, 2014
Does your floodplain management program meet or exceed minimum requirements? <ul style="list-style-type: none"> If exceeds, in what ways? 	The Village floodplain management program meets the minimum requirements.
Are there other local ordinances, plans or programs (e.g., site plan review) that support floodplain management and meeting the NFIP requirements? For instance, does the planning board or zoning board consider efforts to reduce flood risk when reviewing variances such as height restrictions?	Yes.
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	Yes, the Village plans to join the CRS program to improve the CRS classification.

9.13.5 Growth/Development Trends

Understanding how past, current, and projected development patterns have or are likely to increase or decrease risk in hazard areas is a key component to appreciating a jurisdiction’s overall risk to its hazards of concern. Recent and expected future development trends, including major residential/commercial development and major infrastructure development, are summarized in Table 9.13-11 through Table 9.13-13.

Table 9.13-11. Number of Building Permits for New Construction Issued Since the Previous HMP

	New Construction Permits Issued			Total
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	
2019				
Total Permits	0	1	1	2
Permits within SFHA	0	0	0	0
2020				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2021				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2022				
Total Permits	2	1	1	4
Permits within SFHA	0	0	0	0
2023				
Total Permits	1	0	0	1
Permits within SFHA	0	0	0	0

SFHA = Special Flood Hazard Area (1-percent flood event)

Table 9.13-12. Recent Major Development and Infrastructure from 2018 to Present

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
No major development and infrastructure reported.					

* Only location-specific hazard zones or vulnerabilities identified.

Table 9.13-13. Known or Anticipated Major Development and Infrastructure in the Next Five Years

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
No major development and infrastructure anticipated.					

* Only location-specific hazard zones or vulnerabilities identified.

9.13.6 Jurisdictional Risk Assessment

The hazard profiles in Volume I provide detailed information regarding each planning partner’s vulnerability to the identified hazards, including summaries of the Village of Nyack risk assessment results and data used to determine the hazard ranking. Key local risk assessment information is presented in the following section.

Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Village are shown in Figure 9.13-1 and Figure 9.13-2. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps are provided only for hazards that can be identified clearly using mapping techniques and technologies and for which the Village of Nyack has significant exposure. The maps show the location of potential new development, where available.

Figure 9.13-1. Village of Nyack Flood and Dam Inundation Hazard Area Extent and Location

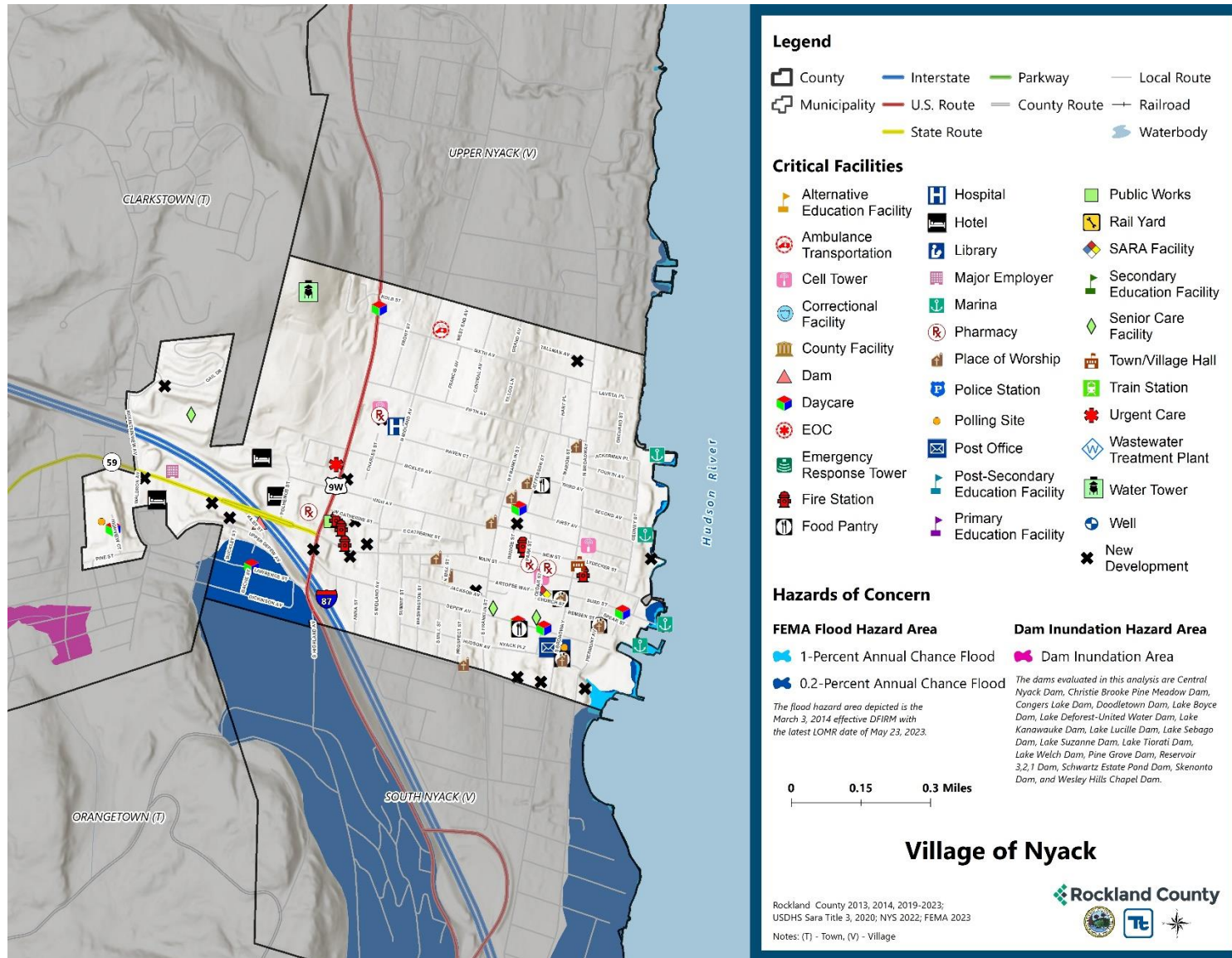
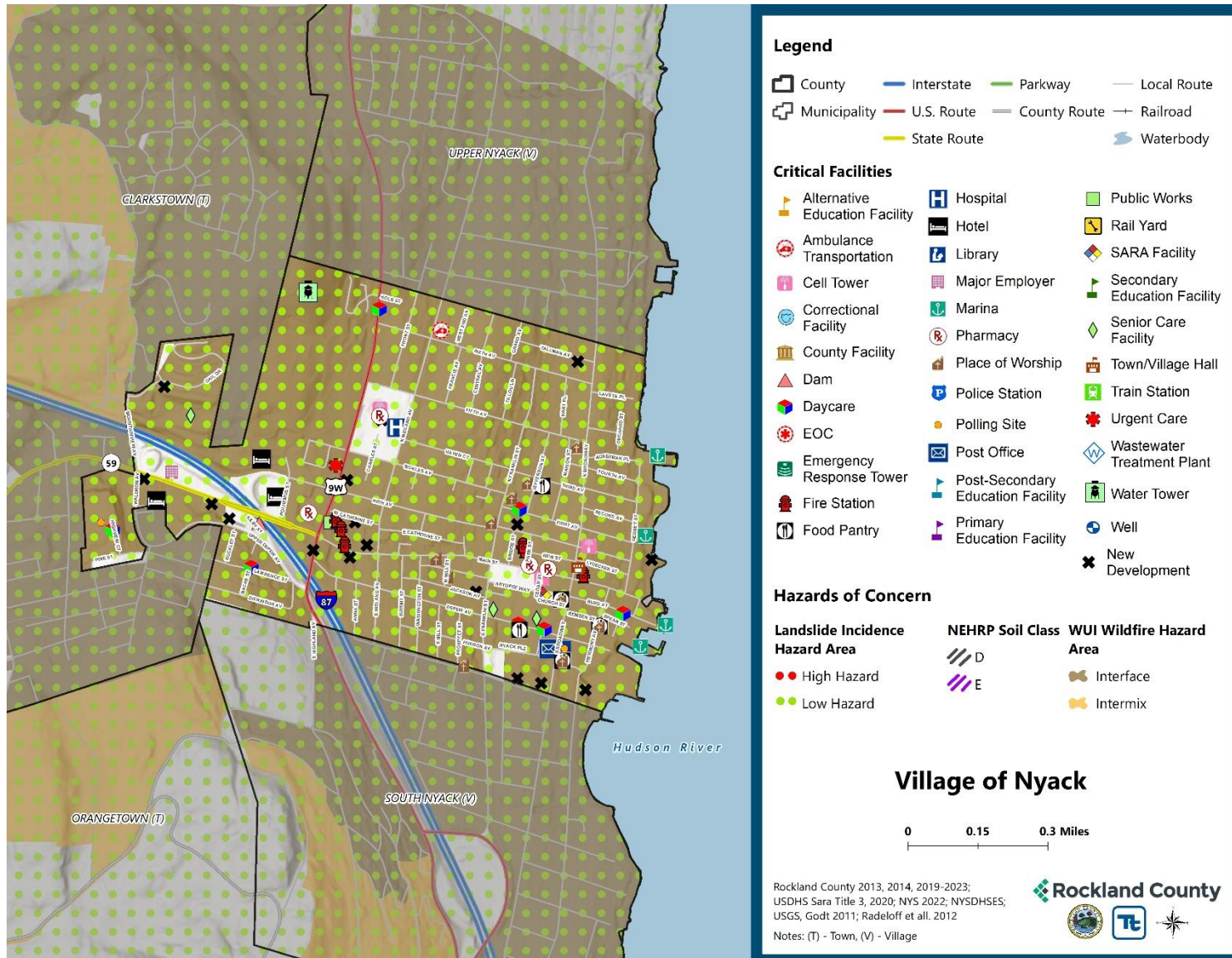


Figure 9.13-2. Village of Nyack Landslide, Earthquake, and Wildfire Hazard Area Extent and Location



Hazard Event History

The history of natural and non-natural hazard events in the Village of Nyack is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 9.13-14 provides details on loss and damage in the Village during hazard events since the last hazard mitigation plan update.

Table 9.13-14. Hazard Event History in the Village of Nyack

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Summary of Damage and Losses in the Village
Jan 20, 2020 - May 11, 2023	New York Covid-19 (3434-EM-NY, 4480-DR-NY)	Yes	The Covid-19 pandemic resulted in nationwide shutdowns, social distancing and masking requirements, and immunization efforts. Since the start of the pandemic, roughly 950 deaths have been reported in Rockland County. The federal Public Health Emergency expired in May 2023, but illness continues to occur as the virus shifts to becoming endemic.	The Covid pandemic affected the Village organization financially due to the waiving of parking enforcement policies and the closure of the Justice Court, as well as increased costs for cleaning service, and operationally due to changed staff availability and scheduling. The Village also had to cover extensive payroll costs for quarantines and Covid illnesses.
April 13, 2020	-	-	High winds across the county led to downed trees power outages, closed roads, and approximately \$200,000 in property damage.	No losses or damage sustained.
August 4, 2020	New York Tropical Storm Isaias (4567-DR-NY)	Yes	The center of Isaias passed about 65 miles west of New York City at 3 pm on August 4, 2020. Tropical storm force winds extended well east of the center of circulation. In addition, one to three inches of rainfall, highest west, were recorded across the county. These types of winds and rainfall across the area resulted in numerous trees and tree limbs being downed, power outages, damages to homes and automobiles, and disruption to transit.	There was no infrastructure damage, however, widespread trees down and debris Village-wide.
August 21-24, 2021	New York Hurricane Henri (3565-EM-NY)	Yes	Rainfall from Tropical Storm Henri resulted in widespread flash flooding across southeastern New York, particularly portions of the Lower Hudson Valley. Rainfall totals generally ranged from two to five inches, with this rain coming in addition to the two to five inches that fell during the predecessor rainfall event the night before.	No damages or losses sustained.

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Summary of Damage and Losses in the Village
September 1-3, 2021	New York Remnants of Hurricane Ida (3572-EM-NY, 4615-DR-NY)	Yes	Extremely heavy rainfall associated with the remnants of Hurricane Ida overspread southeast New York during the evening of September 1 and continued through the early morning hours of September 2. Rainfall totals ranged from five to eight inches across much of the region, with much of that rain falling in just a few hours. This resulted in widespread catastrophic flash flooding.	The Village of Nyack experienced significant damage from this storm. A total culvert collapse on Mill Street; a sinkhole and damages to culvert at 63 Catherine Street, a storm drain failure and collapse of driveway at 22-24 Catherine Street; debris removal village-wide. Total damages estimated to be \$1,800,000 when full repairs are approved by FEMA and reconstruction begins.
July 9 – 10, 2023	-	-	Severe storms and flooding resulted in road closures, including portions of the Palisades Interstate Parkway, throughout Rockland County.	No losses or damage sustained.

EM = Emergency Declaration (FEMA)
 FEMA = Federal Emergency Management Agency
 DR = Major Disaster Declaration (FEMA)
 N/A = Not applicable

Hazard Ranking and Vulnerabilities

The hazard profiles in Volume I have detailed information regarding each planning partner’s vulnerability to the identified hazards. The following summarizes presents key risk assessment results for the Village of Nyack.

Hazard Ranking

The participating jurisdictions have differing degrees of vulnerability to the hazards of concern, so each jurisdiction ranked its own degree of risk to each hazard. The community-specific hazard ranking is based on problems and impacts identified by the risk assessment presented in Volume I. The ranking process involves an assessment of the likelihood of occurrence for each hazard; the potential impacts of the hazard on people, property, and the economy; community capabilities to address the hazard; and changing future climate conditions. Nyack reviewed the County hazard ranking and individual results to assess the relative risk of the hazards of concern to the community. During the review of the hazard ranking, the Village indicated the following hazard rankings are true for the community.

Table 9.13-15 shows Village of Nyack’s final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 9.13-15. Hazard Ranking

Hazard	Rank
Dam Failure	Low
Disease Outbreak	Medium
Drought	Medium

Hazard	Rank
Earthquake	Low
Extreme Temperature	Medium
Flood	Medium
Landslide	Low
Severe Weather	High
Severe Winter Weather	High
Wildfire	Medium

Note: The scale is based on the hazard rankings established in Volume I, modified as appropriate based on review by the jurisdiction

Critical Facilities

Table 9.13-16 identifies critical facilities in the community located in the 1- and 0.2-percent annual chance floodplains.

Table 9.13-16. Critical Facilities Flood Vulnerability

Name	Type	Exposure		Addressed by Proposed Action	Already Protected to 0.2 percent Flood Level (describe protections)
		1 percent Event	0.2 percent Event		
Hudson Vista Associates Dockaminiums	Marina	Yes	Yes	2024-NyackV-07	No

Source: Rockland County; USDHS Sara Title 3

In addition to critical facilities that are exposed to flooding, the following high hazard dams are located in or could impact Nyack:

- Lake Deforest Dam, located in West Nyack on the Hackensack River.
- Lake Lucille Dam, located in Lake Lucille on the Hackensack River.
- Central Nyack Dam, located in Central Nyack.
- Congers Lake Dam, located in Congers on the E Branch Hack.

Identified Issues

After review of the Village of Nyack’s hazard event history, hazard rankings, hazard location, and current capabilities, the Village of Nyack identified the following vulnerabilities within their community:

- Undersize culvert at DPW facility, which leads to flooding issues along the roadway.
- Development around the Nyack Creek has altered its natural functioning, which has increased the risk to flooding around the creek.
- Floodplain ordinance could be out of date and not effective.
- The public may not be aware of the Village's hazard vulnerabilities and planning/zoning decisions.
- Repetitively flooded properties place an undue stress on the property owner and village and efforts should be made to mitigate them.
- Flood prone roads can inhibit emergency response and evacuation during a flood.

- If facilities were built before a certain date, they could be more susceptible to damage from a hazard event.
- New vulnerabilities could have emerged, or existing vulnerabilities could have worsened, which could warrant a code update.
- Current floodplain management ordinance could be out of date and less effective than current regulations require.
- Future FIRMS could show the need for a more stringent flood ordinance if risk has increased.
- Floodplain management and ordinance enforcement staff are not Certified Floodplain Managers.
- Nyack memorial park – viewing pier, ped bridge skatepark is vulnerable to Storm Surge.
- Nyack marina – docks, bulkheads, boat launch, parking lot is vulnerable to Storm Surge.
- Clermont condo – bottom on main st, garage fills with water.
- Nyack boat club, docks moorings, and more were damaged from impacts during hurricane sandy.
- Hook mountain boat club, past 103 Gedney, also big dock with moorings is vulnerable to Storm Surge.
- Other apartment buildings on Gedney Street – 101 Gedney, 103 Gedney, are vulnerable to Storm Surge.

**This issue was identified as a specific area of concern based on resident response to the Rockland County Hazard Mitigation Citizen survey.*

9.13.7 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and prioritizes actions to address over the next five years.

Past Mitigation Initiative Status

Table 9.13-17 indicates progress on the Village’s mitigation strategy identified in the 2019 HMP. Actions that are still recommended but not completed or that are in progress are carried forward and combined with new actions as part of the mitigation strategy for this plan update. Previous actions that are now ongoing programs and capabilities are indicated as such and are presented in the capability assessment earlier in this annex.

Additional Mitigation Efforts

In addition to the mitigation initiatives completed in Table 9.13-17, Nyack identified the following mitigation efforts completed since the last HMP:

- GIS Online Mapping: The Village is participating in the County HMP update which includes public outreach and mapping.

Since the adoption of the County’s first HMP, Nyack has made significant mitigation progress in the following areas:

- The Village continues to review floodplain ordinance and update current standards.

Table 9.13-17. Status of Previous Mitigation Actions

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
NV-1	Replacement/upgrade of culvert at DPW facility	Flooding, Severe Storm	Engineering	Undersize culvert at DPW facility, which leads to flooding issues along the roadway. The proposed project will upgrade or replace the existing culvert and allow for improved stormwater drainage. Functionality of the DPW is critical during a storm event.	1. In Progress 2. Damaged during Hurricane IDA, preliminary plans and specs have been prepared by Village Engineer. Waiting on FEMA site inspection.	1. Include 2. N/A 3. N/A
NV-2	Improvements to Nyack Creek	Flooding, Severe Storm	Engineering	Development around the Nyack Creek has altered its natural functioning, which has increased the risk to flooding around the creek. The Village has been able to finish improvements to Village owned segments of the creek but must determine how to conduct these improvements for segments on private property.	1. In progress 2. Improvements to Nyack Creek	1. Include 2. N/A 3. N/A
NV-3	Review floodplain ordinance and update current standards	Flooding	Engineering	Floodplain ordinance could be out of date and not effective. Review current ordinance to determine if it meets current State and FEMA requirements and will effectively help mitigate loss.	1. Ongoing 2. Review floodplain ordinance and update current standards.	1. Include 2. N/A 3. N/A

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
NV-4	Comprehensive Plan Update	All Hazards	CPG member; Village Trustee	The current comprehensive plan does not incorporate natural disaster mitigation techniques. Ensure that local comprehensive plans incorporate natural disaster mitigation techniques through a courtesy review or draft plans by the County Planning Department.	1. No progress 2. N/A	1. Discontinue 2. N/A 3. The County may not have the time to review the plan.
NV-5	GIS Online Mapping	All Hazards	CPG member; Village Trustee	Lack of public knowledge on the spatial extent of hazards. Provide GIS hazard information online for residents and others in the community to view the Village's hazard vulnerabilities.	1. Complete 2. N/A	1. Discontinue 2. N/A 3. The Village is participating in the County HMP update which includes public outreach and mapping.
NV-6	Public Workshops	All Hazards	CPG member; Village Supervisor	The public may not be aware of the Village's hazard vulnerabilities and planning/zoning decisions. Hold periodic workshops regarding zoning and planning issues that arise regarding natural hazards and hazard mitigation.	1. No progress 2. Hold periodic workshops regarding zoning and planning issues that arise regarding natural hazards and hazard mitigation.	1. Include 2. Hold periodic workshops regarding zoning and planning issues that arise regarding natural hazards and hazard mitigation. 3. N/A

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
NV-7	Maintain List of Repetitive Flood Properties	Flooding, Severe Storm	CPG member; Village Trustee	<p>Repetitively flooded properties place an undue stress on the property owner and village and efforts should be made to mitigate them.</p> <p>Identify and document repetitively flooded properties. Work with owners to explore mitigation opportunities for repetitively flooded properties, and if appropriate and feasible, carry out acquisition, relocation, elevation and floodproofing measures to protect these properties.</p>	<ol style="list-style-type: none"> 1. No progress 2. Partner with owners of repetitively flooded properties to access funding for mitigation measures. 	<ol style="list-style-type: none"> 1. Include 2. Partner with owners of repetitively flooded properties to access funding for mitigation measures. 3. N/A
NV-8	Flood Prone Road Mitigation Measures	Flooding, Severe Storm	CPG member; Village Trustee	<p>Flood prone roads can inhibit emergency response and evacuation during a flood.</p> <p>Develop specific mitigation solutions for flood prone road systems (roads, bridges, intersections, drainage, etc.) under the leadership of County DPW.</p>	<ol style="list-style-type: none"> 1. No progress 2. Develop specific mitigation solutions for flood prone road systems. 	<ol style="list-style-type: none"> 1. Include 2. Develop specific mitigation solutions for flood prone road systems. 3. N/A

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
NV-9	Critical Facilities Protection	All Hazards	CPG member; Village Trustee	<p>If facilities were built before a certain date, they could be more susceptible to damage from a hazard event.</p> <p>Determine the year built and level of protection for critical emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide some degree of protection from natural hazards and pursue potential mitigation opportunities to protect these sites as funding becomes available.</p>	<ol style="list-style-type: none"> 1. No progress 2. Determine the year built and level of protection for critical emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide some degree of protection from natural hazards and pursue potential mitigation opportunities to protect these sites as funding becomes available. 	<ol style="list-style-type: none"> 1. Include 2. Determine the year built and level of protection for critical emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide some degree of protection from natural hazards and pursue potential mitigation opportunities to protect these sites as funding becomes available. 3. N/A
NV-10	Review Village Codes	All Hazards	Jurisdictional CPG member	<p>New vulnerabilities could have emerged, or existing vulnerabilities could have worsened, which could warrant a code update.</p> <p>The Village would like to review and potentially update their existing local codes/ordinances against the identified hazards to determine whether there needs to be any amendments to address identified hazards and, where a need is identified; modify/amend the codes/ordinances as applicable.</p>	<ol style="list-style-type: none"> 1. Ongoing 2. Continue to enforce local codes and amend them as needed as it pertains to any new hazard information. 	<ol style="list-style-type: none"> 1. Include 2. Continue to enforce local codes and amend them as needed as it pertains to any new hazard information. 3. N/A

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
NV-11	Flood Damage Prevention Ordinance Update, FEMA Regulations	Flooding	Village Board; Attorney	Current floodplain management ordinance could be out of date and less effective than current regulations require. Update/revise floodplain management ordinance to comply with latest FEMA regulations.	1. Ongoing. 2. Update/revise floodplain management ordinance to comply with latest FEMA regulations	1. Include 2. Update/revise floodplain management ordinance to comply with latest FEMA regulations 3. N/A
NV-12	Flood Damage Prevention Ordinance Update, FIRMs	Flooding	Village Board	Future FIRMs could show the need for a more stringent flood ordinance if risk has increased. Update/review floodplain management ordinances to be consistent with potential future new FIRMs.	1. Ongoing 2. Update/review floodplain management ordinances to be consistent with potential future new FIRMs.	1. Include 2. Update/review floodplain management ordinances to be consistent with potential future new FIRMs 3. N/A
NV-13	Certified Floodplain Managers	Flooding	Building Department	Floodplain management and ordinance enforcement staff are not Certified Floodplain Managers. Require staff involved in floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs).	1. Ongoing 2. Require staff involved in floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs) - Brooker Engineering will maintain this certification on behalf of the Village	1. Include 2. Require staff involved in floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs) - Brooker Engineering will maintain this certification on behalf of the Village 3. N/A
NV-14	Community Rating System	Flooding	Village Board	The Village is not in the CRS program. Join the Community Rating System (CRS).	1. No progress. 2. N/A	1. Discontinue 2. N/A 3. The Village does not wish to join the CRS program at this time.

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
NV-15	Local Hazard Mitigation Plan Development	All Hazards	Village Board	Village does not currently have a Local Hazard Mitigation Plan. Apply for funding for the development of a local, single-jurisdiction hazard mitigation plan.	1. Complete 2. N/A	1. Discontinue 2. N/A 3. The Village is participating in the County HMP update.
NV-16	Hazard Risk Areas Database	All Hazards	Village Board	Development in hazard areas can lead to avoidable casualties and property damage. Spatial database of all natural hazard risk areas in the Village will allow land use decision makers to plan safe and resilient communities and developments.	1. Complete 2. N/A	1. Discontinue 2. N/A 3. The Village is participating in the County HMP update efforts which includes spatial data for the hazards of concern.

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
NV-17	Privately Owned Critical Facility in Floodplain	Flooding	Village Board	<p>The Little Schoolhouse Daycare, Inc. is a critical facility and located in the floodplain and identified as potentially vulnerable to future flood events. Critical facilities located in the floodplain are not only susceptible to flood damage but also create unnecessary complications for the municipality during an emergency event and post-disaster recovery.</p> <p>The Village does not have jurisdiction over this facility to mitigate. The Village will notify facility manager/operator regarding available mitigation funding sources and mitigation options such as elevating and relocation to reduce future flood events to consider. The Village will also inform the property owner that NYS requires mitigation address the 500-year flood event or “worst damage scenario” for critical facilities.</p>	<p>1. No progress. 2. N/A</p>	<p>1. Discontinue 2. N/A 3. This effort is not needed at this time.</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
NV-18	Publicly Owned Critical Facility Located in Floodplain	Flooding	Nyack Water Department	<p>The Nyack Village Water Co Intake facility is located within the 500-year floodplain.</p> <p>Investigate mitigation options, including flood-proofing, elevation, etc., to protect the Nyack Village Water Co Intake up to the 500-year flood elevation and implement the most effective strategy. The Nyack Water Department, which is a department of the Nyack Village government, owns and has control over the intake even though it is located in the Town of Clarkstown.</p>	<p>1. In progress.</p> <p>2. Investigate mitigation options, including flood-proofing, elevation, etc., to protect the Nyack Village Water Co treatment plant, driveway culvert, and water Intake on the Hackensack River up to the 500-year flood elevation and implement the most effective strategy. The Nyack Water Department, which is a department of the Nyack Village government owns and has control over the intake even though it is located in the Town of Clarkstown.</p>	<p>1. Include</p> <p>2. Investigate mitigation options, including flood-proofing, elevation, etc., to protect the Nyack Village Water Co treatment plant, driveway culvert, and water Intake on the Hackensack River up to the 500-year flood elevation and implement the most effective strategy. The Nyack Water Department, which is a department of the Nyack Village government owns and has control over the intake even though it is located in the Town of Clarkstown.</p> <p>3. N/A</p>

Proposed Hazard Mitigation Initiatives for the HMP Update

Nyack participated in the mitigation strategy workshop for this HMP to identify appropriate actions to include in a local hazard mitigation strategy. Its comprehensive consideration of all possible activities to address hazards of concern included review of the following FEMA documents:

- FEMA 551 “Selecting Appropriate Mitigation Measures for Floodprone Structures” (March 2007)
- FEMA “Mitigation Ideas—A Resource for Reducing Risk to Natural Hazards” (January 2013).

The action worksheets included at the end of this annex list the mitigation actions that Nyack would like to pursue in the future to reduce the effects of hazards. The actions are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in the Village’s priorities.

Table 9.13-18 indicates the range of proposed mitigation action categories. The four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table to further demonstrate the wide range of activities and mitigation measures selected.

Volume I identifies 14 evaluation criteria for prioritizing the mitigation actions. To assist with rating each mitigation action as high, medium, or low priority, a numeric rank is assigned (-1, 0, or 1) for each of the evaluation criteria. Table 9.13-19 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Table 9.13-18. Analysis of Mitigation Actions by Hazard and Category

Hazard	Actions That Address the Hazard, by Action Category									
	FEMA				CRS					
	LPR	SIP	NSP	EAP	PR	PP	PI	NR	SP	ES
Dam Failure	1	-	-	2	2	-	2	-	-	-
Disease Outbreak	1	-	-	1	2	-	1	-	-	-
Drought	1	-	-	1	2	-	1	-	-	-
Earthquake	1	-	-	1	2	-	1	-	-	-
Extreme Temperature	1	-	-	1	2	-	1	-	-	-
Flood	4	4	-	4	5	2	4	-	2	-
Landslide	1	-	-	1	2	-	1	-	-	-
Severe Weather	1	3	-	5	2	1	5	-	2	-
Severe Winter Weather	1	-	-	1	2	-	1	-	-	-
Wildfire	1	-	-	1	2	-	1	-	-	-

Local Plans and Regulations (LPR)—These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.

Structure and Infrastructure Project (SIP)—These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct structures to reduce the impact of hazards.

Natural Systems Protection (NSP)—These are actions that minimize damage and losses and preserve or restore the functions of natural systems.

Education and Awareness Programs (EAP)—These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities

Preventative Measures (PR)—Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.

Property Protection (PP)—These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.

Public Information (PI)—Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.

Natural Resource Protection (NR)—Actions that minimize hazard loss and preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.

Structural Flood Control Projects (SP)—Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.

Emergency Services (ES)—Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities.

Table 9.13-19. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Multi-Hazard	Climate Change	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
2024--NyackV-01	Upgrade DPW Culvert	1	1	1	1	0	0	1	0	1	0	1	1	1	1	1	11	High
2024--NyackV-02	Improvements to Nyack Creek	1	1	1	1	0	0	0	1	1	0	1	1	1	1	1	11	High
2024--NyackV-03	Review floodplain ordinance and update current standards	1	1	1	0	1	1	1	0	1	1	1	1	1	1	1	13	High
2024--NyackV-04	Public Workshops	1	1	1	0	0	0	0	1	1	1	1	1	1	1	1	11	High
2024--NyackV-05	Maintain List of Repetitive Flood Properties	1	1	1	0	0	0	0	0	1	1	1	1	1	1	1	10	High
2024--NyackV-06	Flood Prone Road Mitigation Measures	1	1	1	1	0	0	0	0	1	1	1	1	1	1	1	11	High
2024--NyackV-07	Critical Facilities Protection	1	1	1	1	0	0	1	0	1	1	1	1	1	1	1	12	High
2024--NyackV-08	Review Village Codes	1	1	1	0	1	1	1	0	1	1	1	1	1	1	1	13	High
2024--NyackV-09	Flood Damage Prevention Ordinance Update	1	1	1	0	1	1	1	0	1	1	1	1	1	1	1	13	High
2024--NyackV-10	Certified Floodplain Managers	1	1	1	1	0	1	0	0	1	1	1	1	1	1	1	12	High
2024--NyackV-11	Publicly Owned Critical Facility in the Floodplain	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	High
2024--NyackV-12	Nyack Riverfront Walkway	1	1	1	1	0	0	0	1	1	1	1	1	1	1	1	12	High
2024--NyackV-13	Outreach to High Hazard Dam Owners	1	1	1	1	0	0	0	1	1	1	1	1	1	1	1	13	High
2024--NyackV-14	New Storm Drain on High Ave.	1	1	1	0	0	0	0	1	1	1	1	1	1	1	1	12	High

Note: Volume I, Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-4), Medium (5-8), High (9-14).

Action 2024-NyackV-01. Upgrade DPW Culvert

Action Name:	2024-NyackV-01. Upgrade DPW Culvert	
Description of the Problem:	An undersized culvert at DPW facility leads to flooding issues along the roadway.	
Hazard(s) of Concern: Check all that apply	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The proposed project will upgrade or replace the existing culvert and allow for improved stormwater drainage. Functionality of the DPW is critical during a storm event.	
Lead Agency:	Engineering Department	
Supporting Agencies:	N/A	
Impact on Critical Facilities/Lifelines:	Damaged during Hurricane IDA, preliminary plans and specs have been prepared by Village Engineer. Waiting on FEMA site inspection. Transportation routes are more likely to remain open and access to DPW facility will remain operational.	
Estimated Cost:	Low (< \$10,000)	
Potential Funding Sources:	HMGP, BRIC, CHIPS, operating budget	
Implementation Timeline:	Short Term (<5 years)	
Goals Met:	2	
Benefits:	High (> \$100,000)	
Mitigation Action Type: Check all that apply	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: Check all that apply	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Areas that were previously vulnerable to frequency or severe flooding events will be less likely to be impacted by flooding events.	
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.	
Climate Change Considerations:	Climate change is likely to result in more frequent and severe rainfall events. This action upsizes culvert sizes to meet changing stormwater needs as the result of climate change.	

Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No Action.		Current problem continues.
	Elevate roadway.		Costly and may not solve problem.
	Relocate roadway.		Not possible.

Action 2024-NyackV-02. Improvements to Nyack Creek

Action Name:	2024- NyackV-02. Improvements to Nyack Creek		
Description of the Problem:	Development around the Nyack Creek has altered its natural functioning, which has increased the risk to flooding around the creek.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The Village has been able to finish improvements to Village owned segments of the creek but must determine how to conduct these improvements for segments on private property.		
Lead Agency:	Engineering Department		
Supporting Agencies:	N/A		
Impact on Critical Facilities/Lifelines:	Critical facilities located near Nyack Creek will be protected from future flood events and remain operational during severe storm events.		
Estimated Cost:	Low (< \$10,000)		
Potential Funding Sources:	Municipal Budget		
Implementation Timeline:	Short Term (<5 years)		
Goals Met:	1, 2, 3, 5, 7		
Benefits:	High (> \$100,000)		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)	

CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Socially vulnerable populations residing along Nyack Creek will be protected from severe flooding events.	
Impact on Future Development:	N/A	
Climate Change Considerations:	Educating land owners on climate change considerations for severe flooding events will help to further mitigation practices along Nyack Creek.	
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium
		<input type="checkbox"/> Low
Alternatives	Action	Evaluation
	Do nothing.	Problem persists.
	Mitigate privately owned lands along Nyack Creek.	Not possible.
	Require mitigation practices from landowners along Nyack Creek.	Not possible.

Action 2024-NyackV-03. Review Floodplain Ordinance and Update Current Standards

Action Name:	2024-NyackV-03. Review Floodplain Ordinance and Update Current Standards	
Description of the Problem:	Floodplain ordinance could be out of date and not effective.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	Review current ordinance to determine if it meets current State and FEMA requirements and will effectively help mitigate loss.	
Lead Agency:	Engineering Department	
Supporting Agencies:	N/A	
Impact on Critical Facilities/Lifelines:	Updating the floodplain ordinance will help to protect critical facilities and community lifelines by mitigating flood impacts to these structures and maintain standard of operation.	
Estimated Cost:	Low (< \$10,000)	
Potential Funding Sources:	Municipal Budget	

Implementation Timeline:	Short Term (<5 years)		
Goals Met:	1, 2, 3, 5, 7		
Benefits:	High (> \$100,000)		
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	This action will protect socially vulnerable populations by mitigating flood impacts to the entire community pursuant to state and federal requirements.		
Impact on Future Development:	Updating the floodplain ordinance will influence what type of development takes place in the floodplain and ensure safe and sustainable development practices.		
Climate Change Considerations:	Updates to the floodplain ordinance will take climate change considerations into account as flooding events become more frequent and severe.		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action	Evaluation	
	Do nothing.	Floodplain Ordinance is out of date.	
	Update floodplain ordinance and standards to not meet state and federal requirements.	Problem continues.	
	Update floodplain ordinance and standards without considering climate change projections.	Buildings and critical facilities may not be protected against future flood events.	

Action 2024-NyackV-04. Public Workshops

Action Name:	2024-NyackV-04. Public Workshops
Description of the Problem:	The public may not be aware of the Village's hazard vulnerabilities and planning/zoning decisions. The Village currently does not have a comprehensive education and outreach program. During hazard events, the public may need to quickly access information about evacuation routes and shelters, or other steps they can take to protect themselves and their property. Residents may also need information about what services are available or offline due to flooding from intense precipitation, dam failure, severe storms, and snow melt; where to receive a vaccination or other healthcare in the event of a disease outbreak; public cooling or heat centers, such as libraries, during extreme temperatures; and evacuation areas for earthquakes, landslides, and wildfires.

Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	Hold periodic workshops regarding zoning and planning issues that arise regarding natural hazards and hazard mitigation.	
Lead Agency:	CPG member	
Supporting Agencies:	Village Supervisor	
Impact on Critical Facilities/Lifelines:	N/A	
Estimated Cost:	Low (< \$10,000)	
Potential Funding Sources:	Municipal Budget	
Implementation Timeline:	Short Term (<5 years)	
Goals Met:	1, 2, 3, 5, 7	
Benefits:	High (> \$100,000)	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	This action would benefit the socially vulnerable by providing them information to make informed decisions about natural disaster events, and where to seek shelter and resources.	
Impact on Future Development:	This action would influence future development decisions made by the community and planning department.	
Climate Change Considerations:	This action would supply residents with current climate change data to make informed decisions for the future.	
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium <input type="checkbox"/> Low

Alternatives	Action	Evaluation
	No action.	Problem continues.
	Send out public flyers and social media posts.	Possibility that not everyone has access to the materials and information.
	Rely on state outreach efforts.	Not locally specific.

Action 2024-NyackV-05. Maintain List of Repetitive Flood Properties

Action Name:	2024-NyackV-05. Maintain List of Repetitive Flood Properties		
Description of the Problem:	There are two Severe Repetitive Loss properties in the Village. These properties exhibit elevated vulnerability and may face increasing risks to flood damage due to changes in precipitation intensity and frequency, raising the possibility for these properties to become Repetitive/Severe Repetitive Loss Properties. These properties may require a disproportionate amount of municipal resources after hazard events if they are damaged.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	Partner with owners of repetitively flooded properties to access funding for mitigation measures.		
Lead Agency:	CPG member		
Supporting Agencies:	Village Trustee		
Impact on Critical Facilities/Lifelines:	Mitigating homes located in the repetitive loss area decreases the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.		
Estimated Cost:	Low (< \$10,000)		
Potential Funding Sources:	BRIC, FMA, HMGP, match from property owners		
Implementation Timeline:	Short Term (<5 years)		
Goals Met:	1, 2, 3, 5, 7		
Benefits:	High (> \$100,000)		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)	

CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Collecting data regarding homeowners that reside within flood prone areas provides an opportunity to introduce location-specific opportunities for assistance.	
Impact on Future Development:	Increased outreach to homeowners within a flood prone area will limit construction in areas that are prone to hazard events.	
Climate Change Considerations:	Climate change is likely to increase the frequency and severity of severe rainfall, flash flooding, riverine flooding, and coastal flooding from sea level rise and storm surge events. Mitigating structures in the floodplain will reduce the response and recovery costs as a result of these events, and decrease the loss of human life as a result of these events.	
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No action.	Problem continues.
	Levee around floodplain	Costly, not enough room
	Deployable flood barriers	Requires deployment. Residents may not have adequate time to deploy, especially those who are elderly or disabled.

Action 2024-NyackV-06. Flood Prone Road Mitigation Measures

Action Name:	2024-NyackV-06. Flood Prone Road Mitigation Measures	
Description of the Problem:	Flood prone roads can inhibit emergency response and evacuation during a flood.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	Develop specific mitigation solutions for flood prone road systems.	
Lead Agency:	CPG member	
Supporting Agencies:	Village Trustee	
Impact on Critical Facilities/Lifelines:	Transportation routes are more likely to remain functional during heavy rain or flooding events.	
Estimated Cost:	Low (< \$10,000)	

Potential Funding Sources:	HMGP, BRIC, Annual Budget		
Implementation Timeline:	Short Term (<5 years)		
Goals Met:	1, 2, 5, 7		
Benefits:	Medium (\$10,000 to \$100,000)		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)		<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)		<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Vulnerable communities that would typically lose access to transportation options and potable water will be less likely to suffer damage or service interruptions.		
Impact on Future Development:	Areas with resilient infrastructure encourage residential and commercial development and improve economic resiliency.		
Climate Change Considerations:	Consideration should be taken for an increase in heavy rain and flood events as a result of climate change.		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action.		Problem persists.
	Remove roadways that are flood prone.		Not possible.
	Deploy sandbags during severe flood events.		Costly, not always reliable.

Action 2024-NyackV-07. Critical Facilities Protection

Action Name:	2024-NyackV-07. Critical Facilities Protection
Description of the Problem:	If facilities were built before a certain ordinances or regulations were in place, they could be more susceptible to damage or service failure from a hazard event, such as a dam/levee failure, disease outbreak, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, and wildfire.

Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	Determine the year built and level of protection for critical emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide some degree of protection from natural hazards and pursue potential mitigation opportunities to protect these sites as funding becomes available.	
Lead Agency:	CPG member	
Supporting Agencies:	Village Trustee	
Impact on Critical Facilities/Lifelines:	This action mitigates and protects all critical facilities and lifelines within the Village.	
Estimated Cost:	Low (< \$10,000)	
Potential Funding Sources:	<i>Municipal Budget</i>	
Implementation Timeline:	Short Term (<5 years)	
Goals Met:	1, 2, 5, 7	
Benefits:	Medium (\$10,000 to \$100,000)	
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Protection of critical facilities provides an opportunity for first responders and emergency managers to maintain critical services that socially vulnerable populations rely on.	
Impact on Future Development:	The risk of significant damage occurring to the structure will be reduced, which will allow critical operations to be maintained or only briefly interrupted in severe events. This provides continued support to both current and future development in the service area.	
Climate Change Considerations:	This action addresses anticipated increases in flooding frequency and severity through protection to the 500-year (0.2-percent annual chance) flood level.	
Priority: <i>Check one</i>	<input type="checkbox"/> High <input type="checkbox"/> Medium	<input checked="" type="checkbox"/> Low

Alternatives	Action	Evaluation
	Do nothing.	Problem continues.
	Relocate facilities.	Not possible.
	Conduct mitigation measures internally.	Costly, lack of resources and knowledge.

Action 2024-NyackV-08. Review Village Codes

Action Name:	2024-NyackV-08. Review Village Codes	
Description of the Problem:	Many of the Village’s codes do not incorporate hazard mitigation principles or up-to-date information on the following hazards that it is exposed to: dam/levee failure, disease outbreak, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, and wildfire. New vulnerabilities could have emerged, or existing vulnerabilities could have worsened, which could warrant a code update.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	Continue to enforce local codes and amend them as needed as it pertains to any new hazard information.	
Lead Agency:	Jurisdictional CPG member	
Supporting Agencies:	N/A	
Impact on Critical Facilities/Lifelines:	Updating the Village code to include hazard mitigation practices will help critical facilities and lifelines be more resilient to impacts and can continue to function properly for the wellbeing of the community.	
Estimated Cost:	Low (< \$10,000)	
Potential Funding Sources:	<i>Municipal Budget</i>	
Implementation Timeline:	Short Term (<5 years)	
Goals Met:	1, 2, 3, 5, 7	
Benefits:	Medium (\$10,000 to \$100,000)	

Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)		<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)		<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	N/A		
Impact on Future Development:	An updated Village code will help plan for future development in being more resilient to natural disaster and other hazard events.		
Climate Change Considerations:	The updated Village code will consider climate change impacts when looking at ways to mitigate natural disaster events. This will limit climate change impacts on the community.		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	Do nothing.		Problem continues.
	Amend Village code to not include hazard mitigation.		Problem continues.
	Amend Village code without considering all hazards and climate change projections.		Buildings and critical facilities may not be protected against future disasters.

Action 2024-NyackV-09. Flood Damage Prevention Ordinance Update

Action Name:	2024-NyackV-09. Flood Damage Prevention Ordinance Update, FEMA Regulations		
Description of the Problem:	Current floodplain management ordinance could be out of date and less effective than current regulations require. This may lead to elevated flood risks and vulnerabilities in the Village.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	Update/revise floodplain management ordinance to comply with latest FEMA regulations and be consistent with new FIRMs as they become available.		
Lead Agency:	Village Board		
Supporting Agencies:	Attorney		

Impact on Critical Facilities/Lifelines:	Complying with the latest FEMA regulations will ensure that the critical facilities and lifelines in the floodplain are protected and can remain functioning during emergency events.		
Estimated Cost:	Low (< \$10,000)		
Potential Funding Sources:	Municipal Budget		
Implementation Timeline:	Short Term (<5 years)		
Goals Met:	1, 2, 3, 7		
Benefits:	Medium (\$10,000 to \$100,000)		
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	N/A		
Impact on Future Development:	Complying with the latest FEMA regulations will help to guide safe future development in the floodplain area, and limit unsafe structures in the floodplain.		
Climate Change Considerations:	FEMA regulations consider climate change projections and updating the Flood Damage Prevention Ordinance will ensure the Village is incorporating climate change considerations when mitigating future disaster events.		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action	Evaluation	
	Do nothing.	Problem continues.	
	Update Flood Damage Prevention Ordinance without looking at latest FEMA regulations	Costly, not in compliance, structures may not be protected.	
	Rely on state regulations.	Structures may not be fully protected from flood events.	

Action 2024-NyackV-10. Certified Floodplain Managers

Action Name:	2024-NyackV-10. Certified Floodplain Managers
Description of the Problem:	Floodplain management and ordinance enforcement staff are not Certified Floodplain Managers.

Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	Require staff involved in floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs) - Brooker Engineering will maintain this certification on behalf of the Village	
Lead Agency:	Building Department	
Supporting Agencies:	N/A	
Impact on Critical Facilities/Lifelines:	N/A	
Estimated Cost:	Low (< \$10,000)	
Potential Funding Sources:	Municipal Budget	
Implementation Timeline:	Short Term (<5 years)	
Goals Met:	1, 2, 3, 7	
Benefits:	Medium (\$10,000 to \$100,000)	
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	N/A	
Impact on Future Development:	This action would allow local staff to have knowledge on floodplain management and resilience when planning for future development.	
Climate Change Considerations:	This action would take into account current climate change data for local staff to be informed when making planning considerations.	
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium <input type="checkbox"/> Low

Alternatives	Action	Evaluation
	Do nothing.	The problem would persist.
	Rely on state floodplain management.	The state may not have the capability to provide this service.
	Rely on federal floodplain management.	The federal government may not have the capability to provide this service.

Action 2024-NyackV-11. Publicly Owned Critical Facility in the Floodplain

Action Name:	2024-NyackV-11. Publicly Owned Critical Facility in the Floodplain		
Description of the Problem:	The Nyack Village Water Co Intake facility is located within the 500-year floodplain, elevating its risk to experience potential impacts like damage or service disruption.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	Investigate mitigation options, including flood-proofing, elevation, etc., to protect the Nyack Village Water Co Intake up to the 500-year flood elevation and implement the most effective strategy. The Nyack Water Department, which is a department of the Nyack Village government, owns and has control over the intake even though it is located in the Town of Clarkstown.		
Lead Agency:	Nyack Water Department		
Supporting Agencies:	N/A		
Impact on Critical Facilities/Lifelines:	This action ensures that the water intake facilities, a critical facility to the community, are protected from severe flooding events.		
Estimated Cost:	Low (< \$10,000)		
Potential Funding Sources:	Municipal Budget		
Implementation Timeline:	Short Term (<5 years)		
Goals Met:	1, 2, 4, 6		
Benefits:	High (> \$100,000)		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	

CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	This action ensures the water intake facilities are fully operational to protect all residents, including those socially vulnerable, and maintain full operation.	
Impact on Future Development:	N/A	
Climate Change Considerations:	This action takes into account climate change considerations, as climate change projections show an increase in severe flood events.	
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium
		<input type="checkbox"/> Low
Alternatives	Action	Evaluation
	Do nothing.	Problem persists.
	Mitigate without NYS requirements.	Critical facilities will not be protected, not in compliance.
	Not utilize federal funding opportunities.	Costly, limited resources.

Action 2024-NyackV-12. Nyack Riverfront Walkway

Action Name:	2024-NyackV-12. Nyack Riverfront Walkway	
Description of the Problem:	Several apartment buildings and marinas are vulnerable to storm surge and has historically been damaged due to severe storm surge and flooding.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Village has been awarded funds by NYS to build a walkway and waterpark that will mitigate storm surge impacts, including flooding, in this area.	
Lead Agency:	Engineering Department	
Supporting Agencies:	N/A	
Impact on Critical Facilities/Lifelines:	Critical facilities, such as marinas, and residential buildings will be protected from storm surge impacts to ensure standard of operations.	
Estimated Cost:	Low (< \$10,000)	
Potential Funding Sources:	NYS grant funds	

Implementation Timeline:	Short Term (<5 years)		
Goals Met:	1, 2, 4, 6		
Benefits:	Medium (\$10,000 to \$100,000)		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR)	<input type="checkbox"/> Natural Systems Protection (NSP)	<input type="checkbox"/> Education and Awareness Programs (EAP)
	<input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)		
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR)	<input type="checkbox"/> Natural Resource Protection (NR)	<input type="checkbox"/> Structural Flood Control Projects (SP)
	<input checked="" type="checkbox"/> Property Protection (PP)	<input type="checkbox"/> Emergency Services (ES)	
	<input type="checkbox"/> Public Information (PI)		
Impact on Socially Vulnerable Populations:	Vulnerable populations who live in the apartments located in this area which is subject to damages from storm surge will be mitigated against flood impacts.		
Impact on Future Development:	N/A		
Climate Change Considerations:	Climate change considerations will aid in the design of the riverfront walkway, as storm surge events are expected to increase in severity and frequency.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action	Evaluation	
	Do nothing.	Problem persists.	
	Relocated apartments.	No feasible.	
	Elevate apartments and buildings.	Costly, a short-term solution, does not mitigate all storm surge impacts.	

Action 2024-NyackV-13. Outreach to Dam Owners

Action Name:	2024-NyackV-13
Description of the Problem:	<p>The following dams are High Hazard dams according to the USACE National Dam Inventory that have the potential to impact the Village during a dam failure due to a flood or severe storm:</p> <ul style="list-style-type: none"> • Lake Deforest Dam, located in West Nyack on the Hackensack River. • Lake Lucille Dam, located in Lake Lucille on the Hackensack River. • Central Nyack Dam, located in Central Nyack. • Congers Lake Dam, located in Congers on the E Branch Hack.

Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Village does not have jurisdiction over these dams. It will conduct outreach to provide resources and materials to mitigate these dams will help to limit dam failure and over topping. It will work with dam owners to identify mitigation actions to ensure the dam’s integrity and function up to the .02-percent annual chance flood event.	
Lead Agency:	Village	
Supporting Agencies:	N/A	
Impact on Critical Facilities/Lifelines:	These dams are critical facilities and educating dam owners on mitigation and safety will ensure they are fully operational.	
Estimated Cost:	Low (< \$10,000)	
Potential Funding Sources:	Municipal Budget	
Implementation Timeline:	Short Term (<5 years)	
Goals Met:	1, 2, 4, 6	
Benefits:	High (> \$100,000)	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	These dams may protect socially vulnerable populations from severe flooding events. Protecting and mitigating these dams will ensure they are fully operational in protecting vulnerable populations.	
Impact on Future Development:	N/A	
Climate Change Considerations:	Climate change considerations and projections will be incorporated into the outreach to educate dam owners on proper mitigation techniques.	
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium
		<input type="checkbox"/> Low

Alternatives	Action	Evaluation
	Do nothing.	Problem persists, potential for dam failure.
	Tell dam owners what projects to implement.	No public buy-in, not locally specific to the needs of community.
	Implement mitigation measures around dams.	Costly, may not fully protect/maintain actual dam.

Action 2024-NyackV-14. New Storm Drain on High Ave.

Action Name:	2024-NyackV-15. New Storm Drain on High Ave.	
Description of the Problem:	Severe flooding and sink holes caused property damage along High Ave. during Hurricane Isaias.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	Construction of new storm drain down High Ave to abandon an undersized and broken storm drain that cut from High Ave, under private properties including 22-24 Catherine St, to Catherine St and then goes to Nyack Brook.	
Lead Agency:	Village	
Supporting Agencies:	N/A	
Impact on Critical Facilities/Lifelines:	These roads are critical evacuation and transportation routes for the residential homes that reside in these areas. Mitigation on these roads will ensure standards of operation are upheld during severe hazard events.	
Estimated Cost:	Low (< \$10,000)	
Potential Funding Sources:	Municipal Budget	
Implementation Timeline:	Short Term (<5 years)	
Goals Met:	1, 2, 4, 6	
Benefits:	High (> \$100,000)	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)

CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR)		<input type="checkbox"/> Natural Resource Protection (NR)
	<input checked="" type="checkbox"/> Property Protection (PP)		<input type="checkbox"/> Structural Flood Control Projects (SP)
	<input type="checkbox"/> Public Information (PI)		<input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	This storm drain may protect socially vulnerable populations from severe flooding events. Protecting and mitigating this storm drain will ensure they are fully operational in protecting vulnerable populations.		
Impact on Future Development:	N/A		
Climate Change Considerations:	Climate change considerations and projections will be incorporated into design of the new storm drain.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action	Evaluation	
	Do nothing.	Problem persists.	
	update old storm drain	Structure has exceeded useful lifespan, potential for failure during flood event.	
	Implement mitigation measures to protect existing storm drain.	Costly, may not fully protect/maintain old storm drain, existing storm drain still does not function properly.	

SECTION 9. JURISDICTIONAL ANNEXES

9.14 TOWN OF ORANGETOWN

This jurisdictional annex to the Rockland County Hazard Mitigation Plan (HMP) provides information to assist public and private sectors in the Town of Orangetown with reducing losses from future hazard events. This annex is not guidance of what to do when a disaster occurs; its focus is on actions that can be implemented prior to a disaster to reduce or eliminate damage to property and people. The annex presents a general overview of the Town of Orangetown, describes who participated in the planning process, assesses the Town’s risk, vulnerability, and capabilities, and outlines a strategy for achieving a more resilient community.

9.14.1 Hazard Mitigation Planning Team

The Town of Orangetown identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Town departments. The Superintendent represented the community on the Rockland County HMP Planning Partnership and Steering Committee and supported the local planning process requirements by securing input from persons with specific knowledge to enhance the plan. All departments were asked to contribute to the annex development through reviewing and contributing to the capability assessment, reporting on the status of previously identified actions, and participating in action identification and prioritization.

Table 9.14-1 summarizes Town officials who participated in the development of the annex and in what capacity. Additional documentation of the Town’s planning activities through Planning Partnership meetings is included in Volume I.

Table 9.14-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: James Dean, Superintendent/Highway Department Address: 26 W Orangeburg Rd, Orangeburg, NY 10962 Phone Number: 845-359-6500 x4510 Email: jdean@orangetown.com	Name/Title: Stephen Munno, Administrative Assistant/Highway Department Address: 26 W Orangeburg Rd, Orangeburg, NY 10962 Phone Number: 845-359-6500 x4506 Email: smunno@orangetown.com
National Flood Insurance Program Floodplain Administrator	
Name/Title: Jane Slavin Address: 26 W Orangeburg Rd, Orangeburg, NY 10962 Phone Number: 845-359-8410 x4302 Email: jslavin@orangetown.com	

9.14.2 Municipal Profile

On September 22, 2020, the Village of South Nyack passed a resolution to dissolve the Village of South Nyack. Since dissolution, the Town of Orangetown assumed all governing duties and police services. Therefore, the Village of South Nyack does not have a standalone annex and any pertinent information regarding the 2019 HMP annex for the Village has been incorporated into the Town's annex.

The Town of Orangetown is located along the southern and western border of Rockland County. The Town is bordered to the north by the Town of Clarkstown and its inclusive villages, to the south by the State of New Jersey, to the west by the Town of Ramapo and its inclusive villages, and to the east by the Hudson River. The following hamlets are found in the Town: South Nyack, Blauvelt, Orangeburg, Pearl River, Palisades, Sparkill, Tappan, and Upper Grandview. Lake Tappan and the Hudson River are major

bodies of water found throughout the Town. The Town has a total area of 31.4 square miles, of which, 24.2 square miles is land, and 7.2 square miles is water. The Town is governed by the Town Board consisting of the town council and the town supervisor.

Research has shown that some populations are at greater risk from hazard events because of decreased resources or physical abilities. These populations can be more susceptible to hazard events based on a number of factors including their physical and financial ability to react or respond during a hazard, and the location and construction quality of their housing. Data from the 2017-2021 American Community Survey indicates that 5 percent of the population is five years of age or younger, 19.1 percent is 65 years of age or older, 2.9 percent is non-English speaking, 4.5 percent is below the poverty threshold, and 9.8 percent is considered disabled.

9.14.3 Jurisdictional Capability Assessment and Integration

The Town of Orangetown performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Volume I describes the components included in the capability assessment and their significance for hazard mitigation planning. The jurisdictional assessment for this annex includes analyses of the following:

- Planning and regulatory capabilities
- Development and permitting capabilities
- Administrative and technical capabilities
- Fiscal capabilities
- Education and outreach capabilities
- Classification under various community mitigation programs
- Adaptive capacity to withstand hazard events

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into day-to-day local government operations. As part of the hazard mitigation analysis, planning and /policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress toward plan integration. Development of an updated mitigation strategy provided an opportunity for the Town of Orangetown to identify opportunities for integration of mitigation concepts that can be incorporated into municipal procedures.

Planning, Legal, and Regulatory Capability and Integration

Table 9.14-2 summarizes the regulatory tools that are available to Orangetown.

Table 9.14-2. Planning, Legal, and Regulatory Capability and Integration

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Codes, Ordinances, & Regulations				
Building Code	Yes	NYS Codes, Town Code Chapter 6 – Building Construction Administration	State and Local	Building Inspector
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The NYS Building Code is intended to establish provisions that adequately protect public health, safety and welfare through the minimum requirements for building systems using prescriptive and performance-related provisions. It is founded on broad-based principles that make possible the use of new materials and new building designs. The 2020 edition is an update to the 2018 edition published by the ICC. It is part of the Uniform Fire Prevention and Building Code.				
Zoning/Land Use Code	Yes	Chapter 43 – Zoning (1/23/2024)	Local	Code Enforcement Officer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Zoning Ordinance implements the goals and objectives of the Comprehensive Plan and establishes districts and zoning map for the Town. The latest amendment for Chapter 43 was January 23, 2024.				
Subdivision Code	Yes	Chapter 21 – Land Development Regulations (5/22/1967)	Local	Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The land development regulates and prevents building in areas that would impair flood hazard areas. Chapter 21 establishes the planning board to review land plats and set specific standards for the approval of plats.				
Site Plan Code	Yes	Chapter 21A – Site Development Plan Approval (9/26/1983)	Local	Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Chapter 21A regulates site development and approval of development that would impair flood hazard areas, in hopes to limit future development in the floodplain.				
Stormwater Management Code	Yes	Chapter 30C – Stormwater Management (2006)	Local	Stormwater Management Officer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The purpose of chapter 30C is to establish minimum stormwater management requirements and controls to protect and safeguard the general health, safety, and welfare of the public within the Town.				
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Real Estate Disclosure	Yes	New York State (NYS) mandate, Property Condition Disclosure Act, NY Code – Article 14 §460-467	State and Local	NYS Department of State
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> In addition to facing potential liability for failing to disclose under the exceptions to “caveat emptor,” a home seller must make certain disclosures under the law or pay a credit of \$500 to the buyer at closing. While the PCDA requires a seller to complete a standardized disclosure statement and deliver it to the buyer before the buyer signs the final purchase contract, in practice, most home sellers in New York opt not to complete the statement and instead pay the credit.				
Growth Management	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Environmental Protection Ordinance(s)	Yes	Chapter 11B – Environmental Quality Review (10/23/1978)	Local	Town Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Chapter 11B regulates actions that have significant effect on the environment. Those actions which are deemed “not having significant effect on the environment” are classified as Type II actions and include, but are not limited to: Zoning district changes, building permit applications, demolition of structures, public parking areas, salt spreading and snowplowing, and more. These actions are reviewed and approved by the Town Board.				
Flood Damage Prevention Ordinance	Yes	Chapter 14B – Flood Damage Prevention (1/28/2014)	Federal, State, Local	Director of the Office of Building, Zoning, Planning Administration and Enforcement
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The ordinance promotes public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas of the Town. Among other regulations, chapter 14B controls the alterations of natural floodplains and regulates the construction of flood barriers that unnaturally divert floodwaters. This chapter also qualifies the Town to participate in the NFIP.				
Wellhead Protection	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Emergency Management Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Climate Change Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other: Freeboard	Yes	State mandated BFE+2 for single and two-family residential construction, BFE+1 for all other construction types	State and Local	Director of the Office of Building, Zoning, Planning Administration and Enforcement
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Town requires that all new construction or substantial improvements of structures in the SFHA must have the lowest floor elevated to or above the base flood elevation. This meetings the State’s mandated BFE +2 feet.				
Other: Municipal Separate Storm Sewer System (MS4)	Yes	Chapter 30C – Stormwater Management (2006); 30C-9 Suspension of access to MS4; 30D-23 Suspension of MS4 discharge access	State and Local	Director of the Office of Building, Zoning, Planning Administration and Enforcement
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Both chapter 30C-9 and 30D-23, within the Stormwater Management ordinance regulates and restricts access and discharge fo the municipal separate storm sewer system for the Town.				
Planning Documents				
General/Comprehensive Plan	Yes	Orangetown Comprehensive Plan Update, 2023	Local	OBZPAE
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The comprehensive plan establishes the Town goals and aspirations for future development and provides a roadmap to achieve community resilience. The most recent comprehensive plan was updated in 2023 through a collaborative process of the planning committee and Town Board. Public engagement was seen throughout the process through workshops and public hearings, to ensure a plan that addresses all concerns for all residents in the community.				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Capital Improvement Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Disaster Debris Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Floodplain Management or Watershed Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Stormwater Management Plan	Yes	MS4 Stormwater Reports	Local	DEME
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The MS4 stormwater reports for the town consists of reports on systems such as roads with drainage, catch basins, gutters, ditches, and more owned by the Town and includes information on their design and discharge.				
Open Space Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Urban Water Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Habitat Conservation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Economic Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Community Wildfire Protection Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Community Forest Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Transportation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Agriculture Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Climate Action/ Resiliency/Sustainability Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Tourism Plan	No	-	-	-

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Business/ Downtown Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other (for example NYRCR, etc.)	-	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Response/Recovery Planning				
Comprehensive Emergency Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Continuity of Operations Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Substantial Damage Response Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Threat & Hazard Identification & Risk Assessment	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Post-Disaster Recovery Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Public Health Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other	-	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

Development and Permitting Capability

Table 9.14-3 summarizes the capabilities of Orangetown to oversee and track development.

Table 9.14-3. Development and Permitting Capability

Indicate if your jurisdiction implements the following	Yes/No	Comment:
Do you issue development permits? <ul style="list-style-type: none"> If you issue development permits, what department is responsible? If you do not issue development permits, what is your process for tracking new development? 	Yes	The Building Department issues development permits and tracks new development.
Are permits tracked by hazard area? (For example, floodplain development permits.)	No	-
Do you have a buildable land inventory? <ul style="list-style-type: none"> If you have a buildable land inventory, please describe 	No	-
Describe the level of build-out in your jurisdiction.	N/A	-

Administrative and Technical Capability

Table 9.14-4 summarizes potential staff and personnel resources available to Orangetown and their current responsibilities that contribute to hazard mitigation.

Table 9.14-4. Administrative and Technical Capabilities

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
<i>Administrative Capability</i>		
Planning Board	Yes	The Planning Board reviews and grants approvals for site plans and subdivisions. They also make recommendations to the Zoning Board of Appeals and Town Board on zoning and planning matters.
Zoning Board of Adjustment	Yes	The Zoning Board considers appeals for variances from the zoning ordinance, appeals of decisions made by the Building Inspector, and requests for zoning interpretations.
Planning Department	Yes	The Office of Building, Zoning, Planning, Administration and Enforcement enforces all Local and State codes, issues permits, conducts inspections, and assists both the Planning and Zoning Boards.
Mitigation Planning Committee	No	-
Environmental Board/Commission	Yes	Environmental Management and Engineering
Open Space Board/Committee	No	-
Economic Development Commission/Committee	No	-
Public Works/Highway Department	Yes	The Orangetown Highway Department provides safe, courteous, dependable, and economical service, wherever and whenever possible for all residents. The Department maintains all Local roadways, government facilities and grounds, conducts snow plowing operations, and picks up yard waste.
Construction/Building/Code Enforcement Department	Yes	The Office of Building, Zoning, Planning, Administration and Enforcement enforces all Local and State codes, issues permits, conducts inspections, and assists both the Planning and Zoning Boards.

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
Emergency Management/Public Safety Department	Yes	<p>The mission of the Orangetown Office of Emergency Management is to maintain a high level of planning and preparedness, to protect the citizens of Orangetown, to reduce loss of life, protect important assets, and reduce any disruption or destruction to local commerce and institutions; all while assisting and supporting the town government and emergency services with preparing, responding, and recovering from a disaster.</p> <p>The Orangetown Police Department works in partnership with the community, to protect life and property, solve neighborhood problems and enhance the quality of life in the town.</p> <p>The Fire Prevention Bureau seeks to provide fire safety inspections to multiple family residences, businesses, and public assemblies to ensure safety throughout the Town at all times.</p>
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	Yes	The Orangetown Highway Department provides safe, courteous, dependable, and economical service, wherever and whenever possible for all residents. The Department maintains all Local roadways, government facilities and grounds, conducts snow plowing operations, and picks up yard waste.
Mutual aid agreements	Yes	Orangetown Highway
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	Yes	There are no job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk.
Other: Historic Areas Board of Review	Yes	The Historic Areas Board of Review seeks to maintain the historic areas within the Town, including the Tappan and Palisades Areas. The Board reviews all land use applications to ensure compliance with the Historic Area Ordinance (Chapter 12).
Other: Department of Environmental Management and Engineering (DEME)	Yes	The Department of Environmental Management and Engineering manages the Town sewer collection and treatment system, provide engineering services to all Town departments and to maintain and repair police cars and other vehicles.
Other: Orangetown Parks Development Advisory Committee	Yes	The Committee oversees park acquisition, development, and alteration. Their major goal is to ensure that the Town’s recreational and open space needs will be wisely and prudently met. The Committee also makes recommendations as needed to the Planning Board regarding proposed subdivisions and the effect on the current inventory of parks and open space sites.
Other: Orangetown Environmental Committee		The Orangetown Environmental Committee (OEC) was formed in 2008 with the mission of protecting and improving our local environment for the health and well-being of all residents. The OEC is an advisory committee comprised of Town-appointed volunteers. The OEC works on several areas of environmental concern focusing on energy, waste reduction and recycling, water, and land use and open space.
<i>Technical/Staffing Capability</i>		
Planners or engineers with knowledge of land development and land management practices	Yes	OBZPAE and DEME
Engineers or professionals trained in building or infrastructure construction practices	Yes	OBZPAE and DEME

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
Planners or engineers with an understanding of natural hazards	Yes	OBZPAE
Staff with expertise or training in benefit/cost analysis	Yes	Finance
Professionals trained in conducting damage assessments	Yes	OBZPAE
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	Yes	OBZPAE (GIS)
Environmental scientist familiar with natural hazards	No	-
Surveyor(s)	No	-
Emergency Manager		
Grant writer(s)	Yes	Supervisors Office
Resilience Officer	No	-
Other (this could include stormwater engineer, environmental specialist, etc.)	No	-

Fiscal Capability

Table 9.14-5 summarizes financial resources available to Orangetown.

Table 9.14-5. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use? (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	Yes
Capital improvements project funding	Yes
Authority to levy taxes for specific purposes	Yes
User fees for water, sewer, gas or electric service	Yes
Impact fees for homebuyers or developers of new development/homes	Yes
Stormwater utility fee	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	Yes
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	Yes
Other federal or state Funding Programs	Yes
Open Space Acquisition funding programs	No
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	N/A

Education and Outreach Capability

Table 9.14-6 summarizes the education and outreach resources available to Orangetown.

Table 9.14-6. Education and Outreach Capabilities

Outreach Resources	Available? (Yes/No)	Comment:
Public information officer or communications office	No	-
Personnel skilled or trained in website development	Yes	Contracted
Hazard mitigation information available on your website	Yes	Available on multiple webpages including Office of Emergency Management Committee, Department of Environmental Management and Engineering, Bureau of Fire Prevention, etc. Throughout the website are documents which may contain additional information on hazards.
Social media for hazard mitigation education and outreach	Yes	The Town utilizes various social media outlets, including Facebook and Instagram, to keep residents up to date with what is currently happening in the Town. The Police Department also uses these same outlets to provide the community with information regarding recent crime events, public utility outages, and other hazard related events in the Town and surrounding communities.
Citizen boards or commissions that address issues related to hazard mitigation	Yes	Orangetown Parks Development Advisory Committee, Orangetown Environmental Committee, Historic Areas Board of Review
Warning systems for hazard events	Yes	The County utilizes NY-Alert and CodeRed (the backup to NY-Alert) for emergency notifications (all Towns and Villages have access to it).
Natural disaster/safety programs in place for schools	No	-
Organizations that conduct outreach to socially vulnerable populations and underserved populations	No	-
Public outreach mechanisms / programs to inform citizens on natural hazards, risk, and ways to protect themselves during such events	Yes	-
If yes, please describe.	N/A	The Town utilizes various social media outlets, including Facebook and Instagram, to keep residents up to date with what is currently happening in the Town. The Police Department also uses these same outlets to provide the community with information regarding recent crime events, public utility outages, and other hazard related events in the Town and surrounding communities

Community Classifications

Table 9.14-7 summarizes classifications for community programs available to Orangetown.

Table 9.14-7. Community Classifications

Program	Participating? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-

Program	Participating? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Public Protection (ISO Fire Protection Classes 1 to 10)	No	-	-
New York State Department of Environmental Conservation (NYSDEC) Climate Smart Community	No	-	-
National Weather Service Storm Ready Certification	No	-	-
Firewise Communities classification	No	-	-
Other: Organizations with mitigation focus (advocacy group, non-government)	-	-	-

N/A = Not applicable
 — = Unavailable

Adaptive Capacity

Adaptive capacity is defined as “the ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or respond to consequences” (IPCC, 2022). Each jurisdiction has a unique combination of capabilities to adjust to, protect from, and withstand a future hazard event, future conditions, and changing risk. Table 9.14-8 summarizes the adaptive capacity for each identified hazard of concern and the Town’s capability to address related actions using the following classifications:

- Strong: Capacity exists and is in use.
- Moderate: Capacity might exist; but is not used or could use some improvement.
- Weak: Capacity does not exist or could use substantial improvement.

Table 9.14-8. Adaptive Capacity

Hazard	Adaptive Capacity
Dam Failure	Moderate
Disease Outbreak	Moderate
Drought	Moderate
Earthquake	Moderate
Extreme Temperature	Moderate
Flood	Moderate
Landslide	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

9.14.4 National Flood Insurance Program Compliance

This section provides specific information on the management and regulation of the regulatory floodplain, including current and future compliance with the National Flood Insurance Program (NFIP). The floodplain administrator listed in Table 9.14-1 is responsible for maintaining this information.

NFIP Summary

Table 9.14-9 summarizes the NFIP statistics for Town of Orangetown.

Table 9.14-9. Town of Orangetown NFIP Summary of Policy and Claim Statistics

# Policies	115
# Claims (Losses)	362
Total Loss Payments	\$5,668,545
# Repetitive Loss Properties (NFIP definition)	3
# Repetitive Loss Properties (FMA definition)	33
# Severe Repetitive Loss Properties	5
# Policies Within the 1 percent Annual Chance Flood Boundary	5

NFIP Definition of Repetitive Loss: The NFIP defines a repetitive loss property as any insurable building for which two or more claims of more than \$1,000 were paid by the NFIP within any rolling 10-year period since 1978.

FMA Definition of Repetitive Loss: FEMA’s Flood Mitigation Assistance (FMA) program defines a repetitive loss property as any insurable building that has incurred flood-related damage on two occasions, in which the cost of the repair, on average, equaled or exceeded 25 percent of the market value of the structure at the time of each such flood event.

Definition of Severe Repetitive Loss: A residential property covered under an NFIP flood insurance policy and: (a) That has at least four NFIP claim payments over \$5,000 each, and the cumulative amount of such claims payments exceeds \$20,000; or (b) For which at least two separate claims payments have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building. At least two of the claims must have occurred within any 10-year period, more than 10 days apart.

Source: FEMA, December 2023

Note: RL count may include properties also identified as SRL.

Flood Vulnerability Summary

Table 9.14-10 provides a summary of the NFIP program in the Town of Orangetown.

Table 9.14-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	There are minor to major flood concerns within the Town, especially seen in low-lying areas.
Do you maintain a list of properties that have been damaged by flooding?	No, the Town does not maintain a list at this time.
Do you maintain a list of property owners interested in flood mitigation?	No, the Town does not maintain a list at this time.
How many homeowners and/or business owners are interested in mitigation (elevation or acquisition)?	N/A
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what projects are underway.	No, the Town does not have any RiskMAP projects underway at this time.
How do you make Substantial Damage determinations?	Building Inspectors would conduct an inspection of the damaged/improved structure(s) and advise that a building permit is required to repair/raise/replace said structures(s). If compliance is not obtained, violations will be issued.
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	Unknown, at this time.
How many properties have been mitigated (elevation or acquisition) in your jurisdiction? • If there are mitigation properties, how were the projects funded?	None, at this time.

NFIP Topic	Comments
Do your flood hazard maps adequately address the flood risk within your jurisdiction? <ul style="list-style-type: none"> If not, state why. 	Yes, the flood hazard maps address the flood risks within the Town.
NFIP Compliance	
What local department is responsible for floodplain management?	Yes, Jane Slavin, the Director of the Office of Building, Zoning, Planning Administration and Enforcement. (Building Department)
Are any certified floodplain managers on staff in your jurisdiction?	Yes, Jane Slavin, Director of the Office of Building, Zoning, Planning Administration and Enforcement.
Do you have access to resources to determine possible future flooding conditions from climate change?	Yes, the Town has access to resources to determine possible future flooding conditions from climate change.
Does your floodplain management staff need any assistance or training to support its floodplain management program? <ul style="list-style-type: none"> If so, what type of assistance/training is needed? 	Yes, continuing education and any updates to codes/rules/standards of practice.
Provide an explanation of NFIP administration services you provide (e.g., permit review, GIS, education/outreach, inspections, engineering capability)	Permit/plan review, GIS information as provided to the Town by Rockland County Planning, FEMA Maps available in office, planning and/or zoning reviews as applicable, engineering review, onsite inspections.
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	Obtain proposed cost of the proposed development and compare to the market value of the structure before. If the total costs exceeds 50 percent of the market value, then it would be considered a substantial improvement.
What are the barriers to running an effective NFIP program in the community, if any?	None, at this time.
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? <ul style="list-style-type: none"> If so, state the violations. 	None, at this time.
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	June 6, 2024
What is the local law number or municipal code of your flood damage prevention ordinance?	Ch. 14B, adopted 6-28-1982 by L.L. No. 8-1982, as amended 12-14-1987 by L.L. No. 14-1987. 1-28-2014 by L.L. No. 1-2014.
What is the date that your flood damage prevention ordinance was last amended?	Ch. 14B, adopted 6-28-1982 by L.L. No. 8-1982, as amended 12-14-1987 by L.L. No. 14-1987. 1-28-2014 by L.L. No. 1-2014.
Does your floodplain management program meet or exceed minimum requirements? <ul style="list-style-type: none"> If exceeds, in what ways? 	The floodplain management program meets the minimum requirements.
Are there other local ordinances, plans or programs (e.g., site plan review) that support floodplain management and meeting the NFIP requirements? For instance, does the planning board or zoning board consider efforts to reduce flood risk when reviewing variances such as height restrictions?	Yes, the Planning Board, Zoning Board, Building Department and town engineer all support floodplain management.
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	Yes, the Town plans to join the CRS program.

9.14.5 Growth/Development Trends

Understanding how past, current, and projected development patterns have or are likely to increase or decrease risk in hazard areas is a key component to appreciating a jurisdiction’s overall risk to its hazards of concern. Recent and expected future development trends, including major residential/commercial development and major infrastructure development, are summarized in Table 9.14-11 through Table 9.14-13.

Table 9.14-11. Number of Building Permits for New Construction Issued Since the Previous HMP

	New Construction Permits Issued			Total
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	
2019				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2020				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2021				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2022				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2023				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0

SFHA = Special Flood Hazard Area (1 percent flood event)

Table 9.14-12. Recent Major Development and Infrastructure from 2018 to Present

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
No major development and infrastructure reported.					

* Only location-specific hazard zones or vulnerabilities identified.

Table 9.14-13. Known or Anticipated Major Development and Infrastructure in the Next Five Years

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
No major development and infrastructure anticipated.					

* Only location-specific hazard zones or vulnerabilities identified.

9.14.6 Jurisdictional Risk Assessment

The hazard profiles in Volume I provide detailed information regarding each planning partner’s vulnerability to the identified hazards, including summaries of the Town of Orangetown’s risk assessment results and data used to determine the hazard ranking. Key local risk assessment information is presented below.

Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Town are shown in Figure 9.14-1 and Figure 9.14-2. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps are provided only for hazards that can be identified clearly using mapping techniques and technologies and for which the Town of Orangetown has significant exposure. The maps show the location of potential new development, where available.

Figure 9.14-1. Town of Orangetown Flood and Dam Inundation Hazard Area Extent and Location

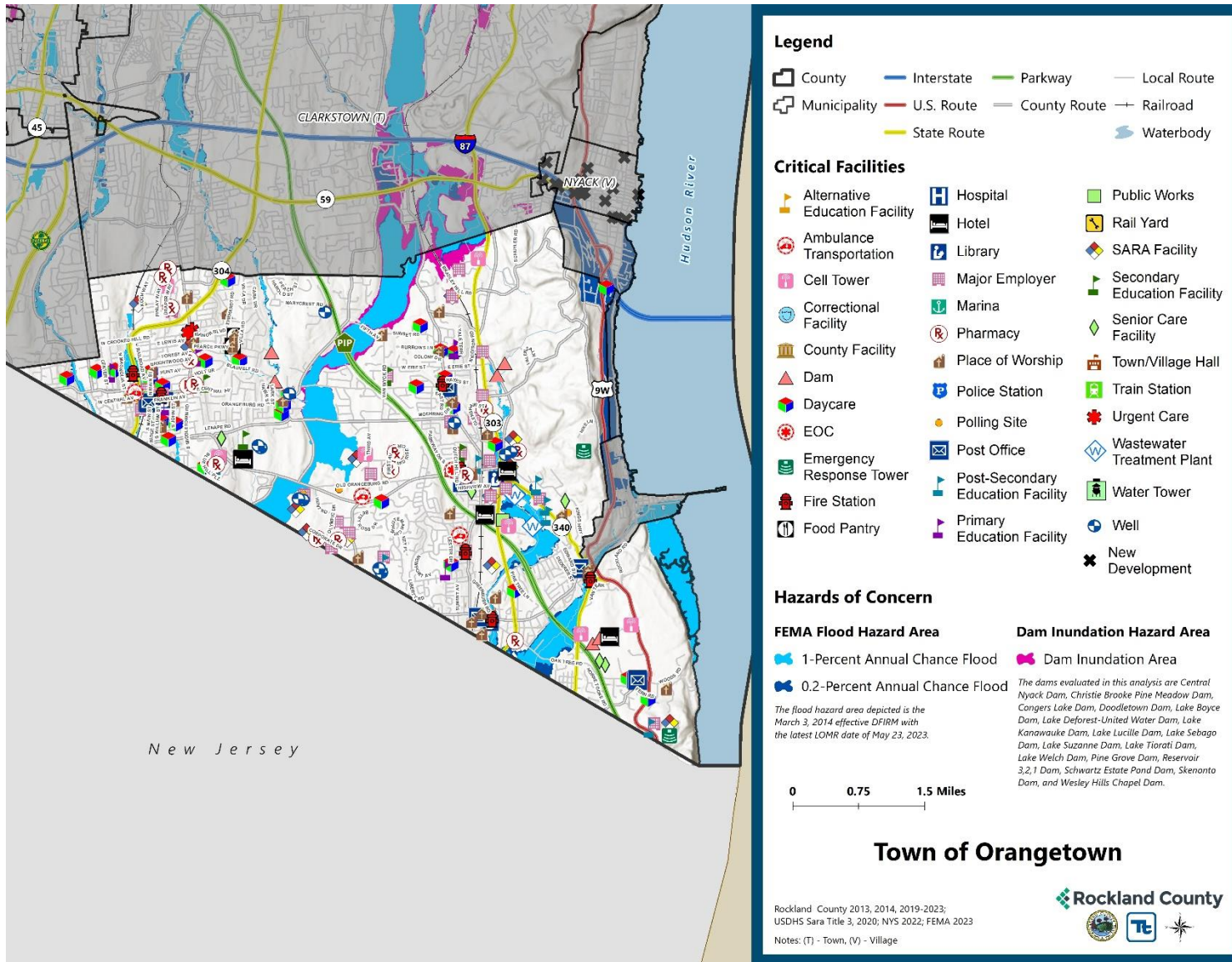
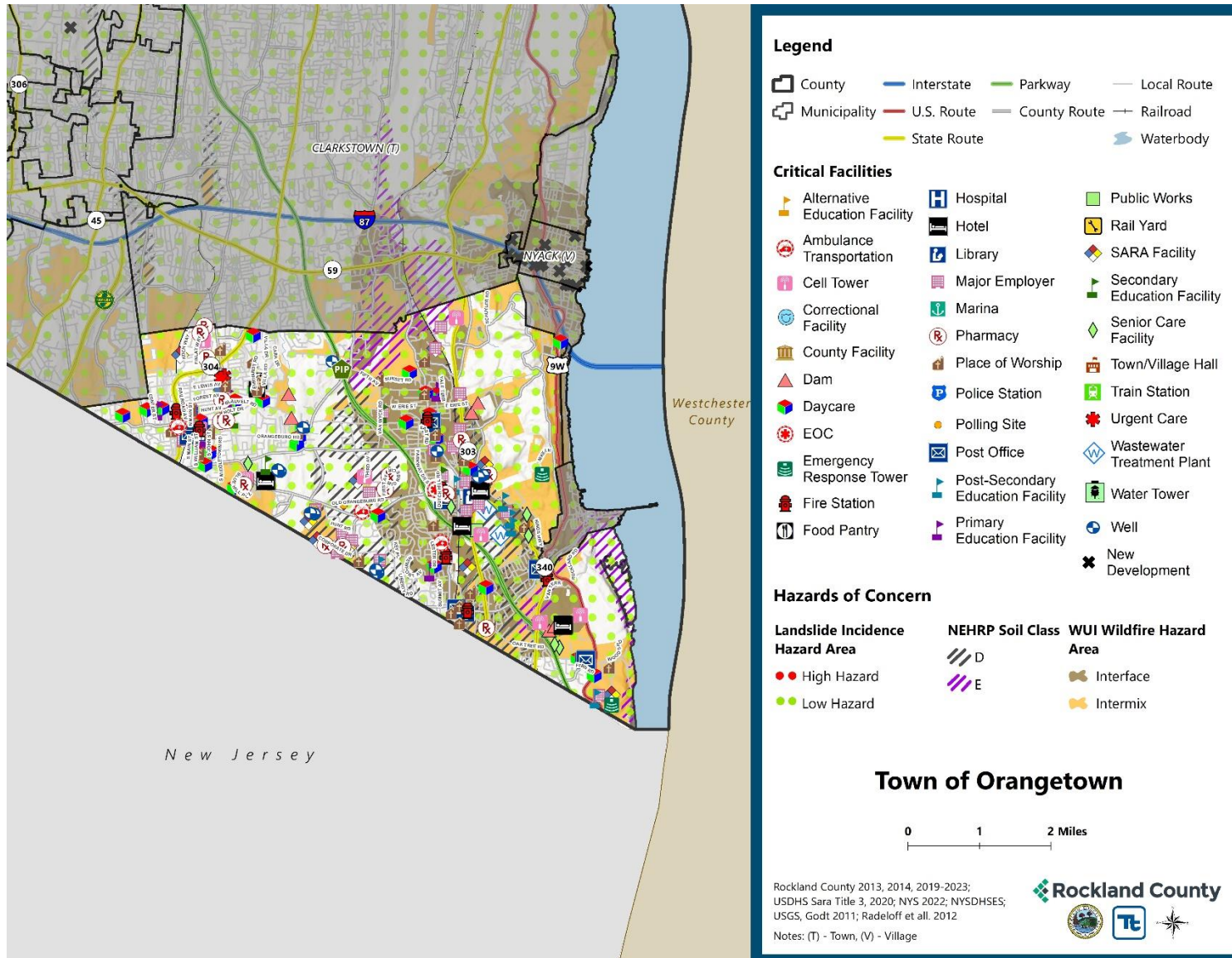


Figure 9.14-2. Town of Orangetown Landslide, Earthquake, and Wildfire Hazard Area Extent and Location



Hazard Event History

The history of natural and non-natural hazard events in the Town of Orangetown is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 9.14-14 provides details on loss and damage in the Town during hazard events since the last hazard mitigation plan update.

Table 9.14-14. Hazard Event History in the Town of Orangetown

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Summary of Damage and Losses in the Town
Jan 20, 2020 - May 11, 2023	New York Covid-19 (3434-EM-NY, 4480-DR-NY)	Yes	The Covid-19 pandemic resulted in nationwide shutdowns, social distancing and masking requirements, and immunization efforts. Since the start of the pandemic, roughly 950 deaths have been reported in Rockland County. The federal Public Health Emergency expired in May 2023 but illness continues to occur as the virus shifts to becoming endemic.	The Town followed Nationally mandated social distancing and closure of public areas. This impacted the community and economy of the Town. Impacts were also seen to the critical facilities, such as first responding agencies and hospitals due to the spread of the virus.
August 4, 2020	New York Tropical Storm Isaias (4567-DR-NY)	Yes	The center of Isaias passed about 65 miles west of New York City at 3 pm on August 4, 2020. Tropical storm force winds extended well east of the center of circulation. In addition, 1 to 3 inches of rainfall, highest west, were recorded across the county. These types of winds and rainfall across the area resulted in numerous trees and tree limbs being downed, power outages, damages to homes and automobiles, and disruption to transit.	The Town experienced flood and wind impacts due to the tropical storm.
August 21-24, 2021	New York Hurricane Henri (3565-EM-NY)	Yes	Rainfall from Tropical Storm Henri resulted in widespread flash flooding across southeastern New York, particularly portions of the Lower Hudson Valley. Rainfall totals generally ranged from 2-5 inches, with this rain coming in addition to the 2-5 inches that fell during the predecessor rainfall event the night before.	The Town experienced severe precipitation during the hurricane.
September 1-3, 2021	New York Remnants of Hurricane Ida (3572-EM-NY, 4615-DR-NY)	Yes	Extremely heavy rainfall associated with the remnants of Hurricane Ida overspread southeast New York during the evening of September 1 and continued through the early morning hours of September 2. Rainfall totals ranged from 5-8 inches across much of the region, with much of that rain falling in just a few hours. This resulted in widespread catastrophic flash flooding.	The Town experienced flood impacts from severe precipitation from remnants of this hurricane.

EM = Emergency Declaration (FEMA)
 FEMA = Federal Emergency Management Agency
 DR = Major Disaster Declaration (FEMA)
 N/A = Not applicable

Hazard Ranking and Vulnerabilities

The hazard profiles in Volume I have detailed information regarding each planning partner’s vulnerability to the identified hazards. The following summarizes presents key risk assessment results for the Town of Orangetown.

Hazard Ranking

The participating jurisdictions have differing degrees of vulnerability to the hazards of concern, so each jurisdiction ranked its own degree of risk to each hazard. The community-specific hazard ranking is based on problems and impacts identified by the risk assessment presented in Volume I. The ranking process involves an assessment of the likelihood of occurrence for each hazard; the potential impacts of the hazard on people, property, and the economy; community capabilities to address the hazard; and changing future climate conditions. Orangetown reviewed the County hazard ranking and individual results to assess the relative risk of the hazards of concern to the community. Table 9.14-15 shows Orangetown’s final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 9.14-15. Hazard Ranking

Hazard	Rank
Dam Failure	Low
Disease Outbreak	Medium
Drought	Medium
Earthquake	Low
Extreme Temperatures	Medium
Flood	Medium
Landslide	Low
Severe Weather	High
Severe Winter Weather	High
Wildfire	Medium

Note: The scale is based on the hazard rankings established in Volume I, modified as appropriate based on review by the jurisdiction

Critical Facilities

Table 9.14-16 identifies critical facilities in the community located in the 1 percent and 0.2 percent annual chance floodplains.

Table 9.14-16. Critical Facilities Flood Vulnerability

Name	Type	Exposure		Addressed by Proposed Action	Already Protected to 0.2 percent Flood Level (describe protections)
		1 percent Event	0.2 percent Event		
Henry Kaufman Pond Dam	Dam	Yes	Yes	2024-OrangetownT-06	No
Thofehrn Pond Dam	Dam	Yes	Yes	2024-OrangetownT-06	No
John Paulding Engine Company #1	Fire Station	Yes	Yes	2024-OrangetownT-06	No

Source: Rockland County 2023, FEMA

In addition to critical facilities that are exposed to flooding, the following high hazard dams are in or could impact Orangetown:

- First Reservoir Dam, located in Thiells on Horse Chock Brook.
- Lake Deforest Dam, located in West Nyack on the Hackensack River.
- Lake Welch Dam, located in Willow Grove on the Minisceongo Creek.
- Lake Sebago Dam, located in Sloatsburg on the Stony Brook Creek.
- Like Garnerville Dam, located in West Haverstraw on the Minisceongo Creek.
- Tivoli Lake Dam, located in Sloatsburg on the Tr-Ramapo River.
- Potake Lake Dam, located in Sloatsburg on the Tr-Ramapo River.
- Lake Kanawauke Dam, located in New Sebago Beach on the Stony Brook.
- Lake Suzanne Dam, located in Spring Valley on the Pascack Brook.
- Lake Lucille Dam, located in Lake Lucille on the Hackensack River.
- Central Nyack Dam, located in Central Nyack.
- Pine Grove Lake Dam, located in Sloatsburg on the Tr-Ramapo River.
- Congers Lake Dam, located in Congers on the E Branch Hack.

Identified Issues

After review of the Town of Orangetown’s hazard event history, hazard rankings, hazard location, and current capabilities, the Town of Orangetown identified the following vulnerabilities within their community:

- Secondary EOC in the Highway Department building – mitigation action
- Communication protocol for disasters to avoid duplicated efforts during emergencies

9.14.7 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and prioritizes actions to address over the next five years.

Past Mitigation Initiative Status

Table 9.14-17 indicates progress on the Town’s mitigation strategy identified in the 2019 HMP. Actions that are still recommended but not completed or that are in progress are carried forward and combined with new actions as part of the mitigation strategy for this plan update. Previous actions that are now ongoing programs and capabilities are indicated as such and are presented in the capability assessment earlier in this annex.

Table 9.14-17. Status of Previous Mitigation Actions

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
OT-1	Route 303 Culvert Upgrade	Flooding, Severe Storm	Orangetown Highway Department	Undersize culvert on Route 303, which leads to flooding issues along the roadway. The proposed project will upgrade or replace the existing culvert and allow for improved stormwater drainage.	1. Complete – upgrades have been complete – June 2021 – grant funded through Climate Smart Communities 2. N/A	1. Discontinue 2. N/A 3. Completed
OT-2	Villa Drive Culvert Upgrade	Flooding, Severe Storm	Orangetown Highway Department	Undersize culvert on Villa Drive, which leads to flooding issues along the roadway. The proposed project will upgrade or replace the existing culvert and allow for improved stormwater drainage.	1. In Progress 2. Construction will start in January 2024	1. Discontinue 2. N/A 3. Currently underway
OT-3	Blauvelt Road Culvert Upgrade	Flooding, Severe Storm	Orangetown Highway Department	Undersize culvert on Blauvelt Road, which leads to flooding issues along the roadway. The proposed project will upgrade or replace the existing culvert and allow for improved stormwater drainage.	1. No Progress 2. Challenges have been staff availability and time.	1. Include 2. The proposed project will upgrade or replace the existing culvert along Blauvelt Road and allow for improved stormwater drainage 3. N/A
OT-4	Ehrhardt Road Retaining Wall	Flooding, Severe Storm	Orangetown Highway Department	Erosion along the bank may compromise the integrity of the roadway. The Town is looking to construct a stone retaining wall along stream.	1. No Progress 2. Challenges have been staff availability and resources.	1. Include 2. The Town will construct a stone retaining wall along the eroding stream near Ehrhardt Road. 3. N/A

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
OT-5	Comprehensive Plan Update	All Hazards	CPG member; Town Supervisor	The current comprehensive plan does not incorporate natural disaster mitigation techniques. Ensure that local comprehensive plans incorporate natural disaster mitigation techniques through a courtesy review or draft plans by the County Planning Department.	1. Complete 2. Plan has been updated.	1. Discontinue 2. N/A 3. Completed
OT-6	Online GIS Hazard Mapping	All Hazards	CPG member; Town Supervisor	Lack of public knowledge on the spatial extent of hazards. Provide GIS hazard information online for residents and others in the community to view the Town's hazard vulnerabilities.	1. Completed 2. The Town has incorporated maps into the local Comprehensive Plan. These include impervious surfaces, wetlands, and flood maps.	1. Discontinue 2. N/A 3. Completed
OT-7	Public Workshops	All Hazards	CPG member; Town Supervisor	The public may not be aware of the Town's hazard vulnerabilities and planning/zoning decisions. Hold periodic workshops regarding zoning and planning issues that arise regarding natural hazards and hazard mitigation.	1. Ongoing Capability 2. Town posts on municipal website and social media where appropriate.	1. Discontinue 2. N/A 3. Ongoing capability

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
OT-8	Residential flood Mitigation	Flooding, Severe Storm	CPG member; Town Supervisor	<p>Repetitively flooded properties place an undue stress on the property owner and Town and efforts should be made to mitigate them.</p> <p>Identify and document repetitively flooded properties. Work with owners to explore mitigation opportunities for repetitively flooded properties, and if appropriate and feasible, carry out acquisition, relocation, elevation and floodproofing measures to protect these properties.</p>	<p>1. Ongoing Capability 2. FEMA came in to speak to residents</p>	<p>1. Discontinue 2. N/A 3. Ongoing capability</p>
OT-9	Critical Facilities Protection	All Hazards	CPG member; Town Supervisor	<p>If facilities were built before a certain date, they could be more susceptible to damage from a hazard event.</p> <p>Determine the year built and level of protection for critical emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide some degree of protection from natural hazards and pursue potential mitigation opportunities to protect these sites as funding becomes available.</p>	<p>1. No Progress 2. N/A</p>	<p>1. Discontinue 2. N/A 3. Consolidate with old actions (OT-9, 15, and 16) into a single new one to address critical facilities protection (2024-OrangetownT-06).</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
OT-10	Emergency Response Plan Update	All Hazards	CPG member; Town Supervisor	<p>The current emergency response plans do not implement monitoring or warning systems.</p> <p>Review existing emergency response plans for enhancement opportunities: work with social support agencies, homeowners' associations, and general public to develop and implement monitoring and warning systems focused on vulnerable populations and provision of adequate shelter facilities.</p>	<p>1. Complete</p> <p>2. Town has an Emergency Operations Plan (EOP) that is updated annually</p>	<p>1. Discontinue</p> <p>2. N/A</p> <p>3. Completed</p>
OT-11	Update Town Codes	All Hazards	Jurisdictional CPG member	<p>New vulnerabilities could have emerged, or existing vulnerabilities could have worsened, which could warrant a code update.</p> <p>The Town would like to review and potentially update their existing local codes/ordinances against the identified hazards to determine whether there needs to be any amendments to address identified hazards and, where a need is identified; modify/amend the codes/ordinances as applicable.</p>	<p>1. Ongoing Capability</p> <p>2. Town updates codes/ordinances when necessary</p>	<p>1. Discontinue</p> <p>2. N/A</p> <p>3. Ongoing capability</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
OT-12	Flood Damage Prevention Ordinance Update, FIRMs	Flooding	Office of Building, Zoning, Planning, Administration and Enforcement	<p>Future FIRMs could show the need for a more stringent flood ordinance if risk has increased.</p> <p>Update/review floodplain management ordinances to be consistent with potential future new FIRMs.</p>	<p>1. Ongoing Capability</p> <p>2. No new FIRMs since last HMP; will update when new FIRMs are released</p>	<p>1. Discontinue</p> <p>2. N/A</p> <p>3. Ongoing capability</p>
OT-13	Stormwater Management in the Floodplain	Flooding, Severe Storm	Office of Building, Zoning, Planning, Administration and Enforcement	<p>Past development within the floodplain has increased the flood risk over time, designing stormwater storage areas within the floodplain will help to offset this increase.</p> <p>Design stormwater storage within the floodplain to compensate for development that has occurred.</p>	<p>1. No Progress</p> <p>2. Town uses existing stormwater management ordinance last updated 2006 and floodplain damage prevention ordinance last updated in 2014.</p>	<p>1. Discontinue</p> <p>2. N/A</p> <p>3. Town continues to use existing ordinances to inform future development and stormwater storage decisions.</p>
OT-14	Hazard Risk Area Digital Database	All Hazards	Office of Building, Zoning, Planning, Administration and Enforcement	<p>Development in hazard areas can lead to avoidable casualties and property damage.</p> <p>Spatial database of all natural hazard risk areas in the Town will allow land use decision makers to plan safe and resilient communities and developments.</p>	<p>1. Completed</p> <p>2. The Town has incorporated maps into the local Comprehensive Plan. These include impervious surfaces, wetlands, and flood maps.</p>	<p>1. Discontinue</p> <p>2. N/A</p> <p>3. Completed</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
OT-15	Privately Owned Critical Facility in the Floodplain	Flooding	Private Property Owners with Support from the Town: Engineering; Office of Building, Zoning, Planning, Administration and Enforcement	<p>There are five critical facilities in the Town located in the floodplain and vulnerable to a flood event. Critical facilities located in the floodplain are not only susceptible to flood damage but also create unnecessary complications for the municipality during an emergency event and post-disaster recovery.</p> <p>The Town does not have jurisdiction over this facility to mitigate. The Town will notify the facility manager/operator regarding potential mitigation options and funding for implementation to consider. Potential projects may include elevation of structure and/or critical mechanics, floodproofing structure or entries/lowest floor, relocation. The Town to inform owners that NYS requires that any mitigation addresses the 500-year flood event or “worst damage scenario”.</p>	<p>1. No Progress 2. N/A</p>	<p>1. Discontinue 2. N/A 3. Consolidate with old actions (OT-9, 15, and 16) into a single new one to address critical facilities protection (2024-OrangetownT-06).</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
OT-16	Cherry Brook Drainage Project	Flooding	Engineering; Office of Building, Zoning, Planning, Administration and Enforcement	Flooding along Bright Wood Ave in Pearl River as a result of excess stormwater flowing into the waterway. Investigation into the feasibility of construction open ditches and additional drainage along the Cherry Brook.	1. In Progress 2. Town completed studies in this area; town will utilize the study's recommendations and incorporate those as mitigation actions	1. Include 2. The Town will include the recommendations from the study as mitigation actions 3. N/A
OT-17	Publicly Owned Critical Facility in the Floodplain	Flooding	Engineering; Office of Building, Zoning, Planning, Administration and Enforcement	Wastewater Treatment Plant is located within the 500-year floodplain. Determine which type of mitigation option will prove most effective to protecting the Wastewater Treatment Plant and implement the action.	1. No Progress 2. N/A	1. Discontinue 2. N/A 3. Consolidate with old actions (OT-9, 15, and 16) into a single new one to address critical facilities protection (2024-OrangetownT-06).
Village of South Nyack						
SN-1	Storm drain – South Highland Ave.	Flooding, Severe Storm	Village of South Nyack	Flood concerns on Highland Ave.	1. No progress 2. Village of South Nyack dissolved.	1. Discontinue 2. N/A 3. Village of South Nyack dissolved.
SN-2	Broadway culvert	Flooding, Severe Storm	Village of South Nyack	Flood concerns on undersized culvert system.	1. No progress 2. Village of South Nyack dissolved.	1. Discontinue 2. N/A 3. Village of South Nyack dissolved.
SN-3	Upgrade generator in Village Hall/Police Station	All Hazards	Village of South Nyack	Problems with generator in Village Hall/Police Station.	1. No progress 2. Village of South Nyack dissolved.	1. Discontinue 2. N/A 3. Village of South Nyack dissolved.

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
SN-4	Ensure that local comprehensive plans incorporate natural disaster mitigation techniques through a courtesy review or draft plans by the County Planning Department.	All Hazards	Village of South Nyack	Local comprehensive plan needs updating.	1. No progress 2. Village of South Nyack dissolved.	1. Discontinue 2. N/A 3. Village of South Nyack dissolved.
SN-5	Expand and disseminate GIS and other hazard information on the internet.	All Hazards	Village of South Nyack	Lack of GIS outreach in the community for floodplain awareness.	1. No progress 2. Village of South Nyack dissolved.	1. Discontinue 2. N/A 3. Village of South Nyack dissolved.

Additional Mitigation Efforts

In addition to the mitigation initiatives completed in Table 9.14-17, Orangetown identified the following mitigation efforts completed since the last HMP:

- Route 303 culvert upgrades completed (June 2021): grant funded through Climate Smart Communities.
- Construction will start in January 2024 for Villa Drive culvert upgrades.
- The local comprehensive plan was updated (2023) to incorporate natural disaster mitigation techniques.
- Town posts on municipal website and social media where appropriate for hazard mitigation techniques and information.
- FEMA came to speak to residents about repetitive loss properties and funding and mitigation opportunities available.
- Town has an Emergency Operations Plan (EOP) that is updated annually.
- Town updates codes/ordinances when necessary.
- No new FIRMs since last HMP; will update when new FIRMs are released.

Since the adoption of the County's first HMP, Orangetown has made significant mitigation progress in the following areas:

- FEMA coordination with property owners.
- Updated comprehensive and EOPs for the Town.
- Increased public engagement.
- Upgrades to stormwater systems.

Proposed Hazard Mitigation Initiatives for the HMP Update

Orangetown participated in the mitigation strategy workshop for this HMP to identify appropriate actions to include in a local hazard mitigation strategy. Its comprehensive consideration of all possible activities to address hazards of concern included review of the following FEMA documents:

- FEMA 551 "Selecting Appropriate Mitigation Measures for Floodprone Structures" (March 2007)
- FEMA "Mitigation Ideas—A Resource for Reducing Risk to Natural Hazards" (January 2013).

The action worksheets included at the end of this annex list the mitigation actions that Orangetown would like to pursue in the future to reduce the effects of hazards. The actions are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in the Town's priorities.

Table 9.14-18 indicates the range of proposed mitigation action categories. The four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table to further demonstrate the wide range of activities and mitigation measures selected.

Volume I identifies 14 evaluation criteria for prioritizing the mitigation actions. To assist with rating each mitigation action as high, medium, or low priority, a numeric rank is assigned (-1, 0, or 1) for each of the evaluation criteria. Table 9.14-19 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Table 9.14-18. Analysis of Mitigation Actions by Hazard and Category

Hazard	Actions That Address the Hazard, by Action Category									
	FEMA				CRS					
	LPR	SIP	NSP	EAP	PR	PP	PI	NR	SP	ES
Dam Failure	-	1	-	2	-	-	2	-	1	-
Disease Outbreak	-	-	-	1	-	-	1	-	-	-
Drought	-	-	-	1	-	-	1	-	-	-
Earthquake	-	-	-	1	-	-	1	-	-	-
Extreme Temperature	-	-	-	1	-	-	1	-	-	-
Flood	-	4	1	2	2	-	2	1	2	-
Landslide	-	-	-	1	-	-	1	-	-	-
Severe Weather	-	4	1	2	2	-	2	1	2	-
Severe Winter Weather	-	-	-	1	-	-	1	-	-	-
Wildfire	-	-	-	1	-	-	1	-	-	-

Local Plans and Regulations (LPR)—These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.

Structure and Infrastructure Project (SIP)—These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct structures to reduce the impact of hazards.

Natural Systems Protection (NSP)—These are actions that minimize damage and losses and preserve or restore the functions of natural systems.

Education and Awareness Programs (EAP)—These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities

Preventative Measures (PR)—Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.

Property Protection (PP)—These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.

Public Information (PI)—Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.

Natural Resource Protection (NR)—Actions that minimize hazard loss and preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.

Structural Flood Control Projects (SP)—Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.

Emergency Services (ES)—Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities.

Table 9.14-19. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Other Community Objectives	Total	High / Medium / Low
2024-OrangetownT-01	Replacement of West Washington Avenue Bridge over Pascack Brook	1	1	1	0	0	0	0	1	0	1	1	1	1	1	9	Medium
2024-OrangetownT-02	Blauvelt Road Culvert Upgrade	1	1	1	0	0	0	1	1	1	1	1	1	1	1	11	High
2024-OrangetownT-03	Ehrhardt Road Retaining Wall	1	1	1	0	0	0	0	1	1	1	1	1	1	1	10	Medium
2024-OrangetownT-04	Cherry Brook Drainage Project	1	1	1	0	0	0	1	1	1	1	1	1	1	1	11	High
2024-OrangetownT-05	Stormwater Bioretention Basin	1	1	1	0	0	0	1	1	1	1	1	1	1	1	11	High
2024-OrangetownT-06	Critical Facilities in the Floodplain	1	1	1	0	0	0	0	0	1	1	1	1	1	1	9	Medium
2024-OrangetownT-07	Socially Vulnerable Populations Outreach	1	0	1	1	1	1	0	1	1	1	1	1	1	1	12	High

Note: Volume I, Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14).

Action 2024-OrangetownT-01. Replacement of West Washington Avenue Bridge over Pascack Brook

Action Name:	2024-OrangetownT-01. Replacement of West Washington Avenue Bridge over Pascack Brook	
Description of the Problem:	The West Washington Avenue Bridge, which carries County Route 30 over the Pascack Brook has outlived its useful service life and needs replacement. The roadway approaches are sharp turns on steep grades and are difficult to navigate during adverse weather conditions. The channel alignment of Pascack Brook in relation to West Washington Avenue in the vicinity of the bridge results in embankment scour and roadway flooding during extreme storm events.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The project will replace the bridge with a new structure having improved hydraulic capacity, alignment, and scour resistance. We anticipate that the new structure will be upstream of the existing bridge with the stream channel adjusted to improve its alignment with the structure and eliminate or minimize the potential for embankment and foundation scour. The bridge will be designed to accommodate all legal loads. The project will realign the approach roadways between Old Pascack Road and Highland Avenue to improve horizontal and vertical curves and consider replacement of drainage systems.	
Lead Agency:	Rockland County Highway Department	
Supporting Agencies:	Town Highway Department	
Estimated Cost:	\$3,000,000	
Potential Funding Sources:	FEMA HMGP, Federal, State	
Implementation Timeline:	Requests for proposals issued late 2023. Construction expected to begin early 2024.	
Goals Met:	1, 2	
Benefits:	This action will replace the existing bridge, including upgrading drainage systems and realigning channels, so that the roadway will be accessible for evacuations, travel, and emergency response during heavy precipitation and severe storm events.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	N/A	
Impact on Critical Facilities/Lifelines:	This action will identify measures to protect infrastructure in the transportation lifeline, which will lead to the assurance of clear roadways for evacuations, regular travel, and emergency responses.	
Impact on Capabilities	N/A	
Impact on Future Development:	Future development in the surrounding area will be less likely to experience damage from flooding and to be isolated due to an impassable bridge.	
Climate Change Considerations:	A warmer atmosphere means more intense precipitation events and storms, which elevates the risk for overtopping.	

Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Severity of access problem continues, failure potential increases
	Remove the structure		Eliminates critical travel route, likely low political and public support
	Replace structure with current alignment		Current access problems continue

Action 2024-OrangetownT-02. Blauvelt Road Culvert Upgrade

Action Name:	2024-OrangetownT-02. Blauvelt Road Culvert Upgrade	
Description of the Problem:	Undersize culvert on Blauvelt Road, which leads to flooding issues along the roadway.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The proposed project will upgrade or replace the existing culvert along Blauvelt Road and allow for improved stormwater drainage.	
Lead Agency:	Orangetown Highway Department	
Supporting Agencies:	N/A	
Estimated Cost:	Low (< \$10,000)	
Potential Funding Sources:	FEMA HMGP, Federal, State	
Implementation Timeline:	Short Term (<5 years)	
Goals Met:	1, 2	
Benefits:	High (> \$100,000)	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	This action would ensure standard of operation for an important roadway that would serve vulnerable populations during an evacuation.	
Impact on Critical Facilities/Lifelines:	Updating the undersized culverts would maintain the roadway for future use and mitigate against future flooding impacts.	
Impact on Capabilities	By updating the culvert, first responders and others will be able to remain operational during severe disaster events.	
Impact on Future Development:	N/A	

Climate Change Considerations:	As climate change is affecting future flood events, this action would work to limit the impacts to the community from severe flooding.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Problem persists.
	Elevate the roadway.		Not feasible, long timeframe to implementation.
	Remove roadway.		Eliminates critical travel route, likely low political and public support

Action 2024-OrangetownT-03. Ehrhardt Road Retaining Wall

Action Name:	2024-OrangetownT-03. Ehrhardt Road Retaining Wall	
Description of the Problem:	Erosion along the bank may compromise the integrity of the roadway.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Town will construct a stone retaining wall along the eroding stream near Ehrhardt Road.	
Lead Agency:	Orangetown Highway Department	
Supporting Agencies:	N/A	
Estimated Cost:	Medium (\$10,000 to \$100,000)	
Potential Funding Sources:	FEMA HMGP, Federal, State	
Implementation Timeline:	Short Term (<5 years)	
Goals Met:	1, 2	
Benefits:	High (> \$100,000)	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input checked="" type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input checked="" type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Mitigating the eroding stream will protect the roadway from future flood events and erosion, maintaining standards of operation for socially vulnerable populations to safely evacuate during time of crisis.	
Impact on Critical Facilities/Lifelines:	This action will protect the roadway and ensure functionality during a disaster event.	

Impact on Capabilities	This action will ensure first responders and other staff to remain operational during a disaster event.		
Impact on Future Development:	N/A		
Climate Change Considerations:	As climate change exacerbates flooding and erosion issues, this action will mitigate direct and cascading future impacts felt by the community.		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Problem persists.
	Remove the road		Eliminates critical travel route, likely low political and public support
	Fill in eroded bank with sediment		Short-term solution, possible negative environmental impacts.

Action 2024-OrangetownT-04. Cherry Brook Drainage Project

Action Name:	2024-OrangetownT-04. Cherry Brook Drainage Project		
Description of the Problem:	Flooding along Bright Wood Ave in Pearl River as a result of excess stormwater flowing into the waterway. Town completed studies in this area.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The Town will include the recommendations from the study as mitigation actions.		
Lead Agency:	Engineering Department: Office of Building, Zoning, Planning, Administration and Enforcement		
Supporting Agencies:	N/A		
Estimated Cost:	Low (< \$10,000)		
Potential Funding Sources:	FEMA HMGP, Federal, State		
Implementation Timeline:	Short Term (<5 years)		
Goals Met:	1, 2		
Benefits:	High (> \$100,000)		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	

Impact on Socially Vulnerable Populations:	This road serves as access points for residential areas and evacuation routes, maintaining operation would allow all community members to be able to safely evacuate during a disaster event.		
Impact on Critical Facilities/Lifelines:	This action would mitigate flooding impacts seen to the road to ensure standards of operation during disaster event.		
Impact on Capabilities	This action would ensure that first responders can remain operational through functional road systems during disaster events.		
Impact on Future Development:	N/A		
Climate Change Considerations:	.Climate change will increase severe storm severity and frequency. This action will protect the community from future climate change impacts.		
Priority: Check one	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Problem persists.
	Complete mitigation strategies without considering study.		Likelihood that the problem will not be addressed properly, not feasible/efficient.
	Let private landowners to mitigate flooding.		Lack of resources and knowledge to implement mitigation actions.

Action 2024-OrangetownT-05. Stormwater Bioretention Basin

Action Name:	2024-OrangetownT-05. Stormwater Bioretention Basin		
Description of the Problem:	There is extensive flooding along Mountainview Ave. and Green Bush Rd. that runs along the 303 corridors.		
Hazard(s) of Concern: Check all that apply	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The Town will install a stormwater bioretention basin to mitigate flood concerns in this area.		
Lead Agency:	Engineering Department		
Supporting Agencies:	Office of Building, Zoning, Planning, Administration and Enforcement		
Estimated Cost:	Low (< \$10,000)		
Potential Funding Sources:	FEMA HMGP, Federal, State		
Implementation Timeline:	Short Term (<5 years)		
Goals Met:	1, 2		
Benefits:	High (> \$100,000)		
Mitigation Action Type: Check all that apply	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	

CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	This action will protect critical roadways which serve the community, including vulnerable populations, during disaster events.	
Impact on Critical Facilities/Lifelines:	This action is a nature-based solution project to protect critical roadway used for safe evacuation and day-to-day needs of the community.	
Impact on Capabilities	Installing a stormwater bioretention basin will help to mitigate flooding on roadways to ensure standard of operation for first responders and staff during a disaster.	
Impact on Future Development:	This action will implement flood mitigation measures in a sustainable way to promote stormwater resilience in the community and has a low impact on the environment.	
Climate Change Considerations:	Climate change will impact flooding concerns in the community, increasing stormwater and putting pressure on pre-existing stormwater systems. This action will mitigate future stormwater runoff to the community through a sustainable solution.	
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No action	Flooding continues.
	Remove the roadways	Eliminates critical travel route, likely low political and public support
	Deploy sandbags around critical infrastructure during storm events	Short-term solution, problem persists, lack of time to deploy during severe event

Action 2024-OrangetownT-06. Critical Facilities in the Floodplain

Action Name:	2024-OrangetownT-06. Critical Facilities in the Floodplain	
Description of the Problem:	The following critical facilities are located floodplain and identified as vulnerable to the flood hazard: Henry Kaufman Pond Dam, Thofehr Pond Dam, and John Paulding Engine Company #1. T	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Town will work with facility owners to determine evaluate the need for potential mitigation projects to protect the dams to the 500-year flood or worst-case scenario. Potential feasible projects may include the following: elevations, dry floodproofing, backup power supply, retrofits, or relocation. The owners will need to determine the most cost effective and feasible mitigation action for these facilities.	
Lead Agency:	Building and Engineering Departments	
Supporting Agencies:	Rockland County OFES	
Estimated Cost:	Low (< \$10,000)	
Potential Funding Sources:	Town Operating Budget	
Implementation Timeline:	Short-term (< 5 years)	
Goals Met:	2	
Benefits:	Low (> \$10,000)	

Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	N/A	
Impact on Critical Facilities/Lifelines:	This project aims to ensure the ability of the dams to continue functioning during severe storms so as not to lead to additional flooding.	
Impact on Capabilities:	N/A	
Impact on Future Development:	This project can help mitigate potential damage in the inundation areas.	
Climate Change Considerations:	N/A	
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No action	Problem persists
	County completes mitigation actions in inundation areas	Does not reduce or eliminate risk

Action 2024-OrangetownT-07. Socially Vulnerable Populations Outreach

Action Name:	Action 2024-OrangetownT-07. Socially Vulnerable Populations Outreach	
Description of the Problem:	The Town does not have any organizations that conduct outreach to socially vulnerable populations and underserved populations. During hazard events, the public may need to quickly access information about evacuation routes and shelters, or other steps they can take to protect themselves and their property. Residents may also need information about what services are available or offline due to flooding from intense precipitation, dam failure, severe storms, and snow melt; where to receive a vaccination or other healthcare in the event of a disease outbreak; public cooling or heat centers, such as libraries, during extreme temperatures; and evacuation areas for earthquakes, landslides, and wildfires. Socially vulnerable and underserved populations may rely on these types of services more heavily than other segments on the population. Furthermore, they may be less able to access these resources due to a variety of potential obstacles, such as mobility issues or language barriers.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	Create outreach materials, or utilize those from Rockland County, on hazard risks for socially vulnerable populations. Methods of distribution may include Village events, the Town newsletters, social media, the Village website, and having the materials on display for the public at Village libraries and offices. Consider hiring staff to work directly with socially vulnerable populations.	
Lead Agency:	Town Administration	
Supporting Agencies:	Rockland County	
Estimated Cost:	Low	
Potential Funding Sources:	Town Budget, HMGP	
Implementation Timeline:	Within 3 years	
Goals Met:	1, 3, 5	
Benefits:	This action will ensure there is an individual working to identify and work with the socially vulnerable populations in the Town. Furthermore, this action will create opportunities to educate and inform populations on hazard risks.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Socially vulnerable populations in the Town will become educated on hazards risks. The Town will identify an individual to identify and work with these populations to ensure the most up to date information is being shared.	
Impact on Critical Facilities/Lifelines:	Educating populations on hazard risk and how to mitigate the risks can decrease the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.	
Impact on Capabilities	This action would build upon the County’s already existing public education and outreach program and adapt its contents to the Town’s needs.	

Impact on Future Development:	Not applicable		
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate-related disaster events. This action will inform residents and business owners of how to reduce risk from hazards and how climate change may exacerbate those risks.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current methods remain the only ones used
	Rely on state or federal resources		Resources may be generalized and not specific to the risks in the Town
	Use only a few methods for distribution		Using only a few methods of distribution may hinder socially vulnerable populations from receiving the guidance

SECTION 9. JURISDICTIONAL ANNEXES

9.15 VILLAGE OF PIERMONT

This jurisdictional annex to the Rockland County Hazard Mitigation Plan (HMP) provides information to assist public and private sectors in the Village of Piermont with reducing losses from future hazard events. This annex is not guidance of what to do when a disaster occurs; its focus is on actions that can be implemented prior to a disaster to reduce or eliminate damage to property and people. The annex presents a general overview of the Village of Piermont, describes who participated in the planning process, assesses the Village’s risk, vulnerability, and capabilities, and outlines a strategy for achieving a more resilient community.

9.15.1 Hazard Mitigation Planning Team

The Village of Piermont identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Village departments. A Village Trustee and Committee Member represented the community on the Rockland County HMP Planning Partnership and Steering Committee and supported the local planning process requirements by securing input from persons with specific knowledge to enhance the plan. All departments were asked to contribute to the annex development through reviewing and contributing to the capability assessment, reporting on the status of previously identified actions, and participating in action identification and prioritization.

Table 9.15-1 summarizes Village officials who participated in the development of the annex and in what capacity. Additional documentation of the Village’s planning activities through Planning Partnership meetings is included in Volume I.

Table 9.15-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Nathan Mitchell, Trustee and Committee Member Address: 478 Piermont Ave. Piermont NY 10968 Phone Number: 845-359-1258 Email: nmitchell@piermont-ny.gov	Name/Title: Jennifer DeYorgi, Village Clerk and Treasurer Address: 478 Piermont Ave. Piermont NY 10968 Phone Number: 845-359-1258 x303 Email: clerk@piermont-ny.gov
National Flood Insurance Program Floodplain Administrator	
Name/Title: Ken DeGennaro, Village Engineer Address: 478 Piermont Ave. Piermont NY 10968 Phone Number: 845-357-4411 x118 Email: kdegennaro@brookerengineering.com	

9.15.2 Municipal Profile

The Village of Piermont is located within the Town of Orangetown, along the western border of Rockland County. The Village is bordered to the north by the Village of Grand View-on-Hudson, to the south and east by the Town of Orangetown, and to the west by the Hudson River. The Hudson River is a major body of water found within the Village. The Village has a total area of 1.2 square miles, of which, 0.7 square miles is land, and 0.5 square miles is water. The Village is governed by the Village Board, which consists of the Mayor and four Trustees.

Research has shown that some populations are at greater risk from hazard events because of decreased resources or physical abilities. These populations can be more susceptible to hazard events based on a number of factors including their physical and financial ability to react or respond during a hazard, and the location and construction quality of their housing. Data from the 2017-2021 American Community Survey indicates that 5.6 percent of the population is 5 years of age or younger, 21.3 percent is 65 years of age or older, 5.6 percent is non-English speaking, 1.9 percent is below the poverty threshold, and 7.2 percent is considered disabled.

9.15.3 Jurisdictional Capability Assessment and Integration

The Village of Piermont performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Volume I describes the components included in the capability assessment and their significance for hazard mitigation planning. The jurisdictional assessment for this annex includes analyses of the following:

- Planning and regulatory capabilities
- Development and permitting capabilities
- Administrative and technical capabilities
- Fiscal capabilities
- Education and outreach capabilities
- Classification under various community mitigation programs
- Adaptive capacity to withstand hazard events

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into day-to-day local government operations. As part of the hazard mitigation analysis, planning and /policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress toward plan integration. Development of an updated mitigation strategy provided an opportunity for the Village of Piermont to identify opportunities for integration of mitigation concepts that can be incorporated into municipal procedures.

Planning, Legal, and Regulatory Capability and Integration

Table 9.15-2 summarizes the regulatory tools that are available to Piermont.

Table 9.15-2. Planning, Legal, and Regulatory Capability and Integration

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Codes, Ordinances, & Regulations				
Building Code	Yes	NYS Building Code	State and Local	Building Department
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The NYS Building Code is intended to establish provisions that adequately protect public health, safety, and welfare through the minimum requirements for building systems using prescriptive and performance-related provisions. It is founded on broad-based principles that make possible the use of new materials and new building designs. The 2020 edition is an update to the 2018 edition published by the ICC. It is part of the Uniform Fire Prevention and Building Code.				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Zoning/Land Use Code	Yes	Chapter 210 – Zoning (12/15/1998)	Local	Building Department and Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The purpose of chapter 210 is to promote the health, safety, morals, and general welfare of the community by conserving land and building values and encouraging the most appropriate use of land throughout the Village of Piermont.				
Subdivision Code	Yes	Chapter 174 – Subdivision of Land (7/15/2003)	Local	Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Chapter 174 approves plats showing lots, blocks, or sites, with or without streets or highways, to conditionally approve preliminary plats and to approve the development of plats, entirely or partially undeveloped and which have been filed in the office of the County Clerk of the County of Rockland. The Village Planning Board must consider land subdivision regulations as part of a plan for the environmentally sound and prudent, orderly, efficient and economical development of the Village.				
Site Plan Code	Yes	Chapter 210 – Zoning (6/20/1977)	Local	Planning Board, Building Department and Village Engineer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The purpose of chapter 210 is to promote the health, safety, morals, and general welfare of the community by conserving land and building values and encouraging the most appropriate use of land throughout the Village of Piermont. Chapter 210 includes site plan code for the Village.				
Stormwater Management Code	Yes	Chapter 169 (9/25/2007)-170 – Stormwater Control, Stormwater Management (9/21/2010)	State and Local	Planning Board and Village Engineer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Chapters 169 establishes minimum stormwater management requirements and controls to protect and safeguard the general health, safety, and welfare of the public residing within the Village. Chapter 170 establishes regulation of non-stormwater discharges to the municipal separate storm sewer system (MS4) to the maximum extent practicable as required by federal and New York State law.				
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Real Estate Disclosure	Yes	New York State (NYS) mandate, Property Condition Disclosure Act, NY Code – Article 14 §460-467	State and Local	NYS Department of State
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> In addition to facing potential liability for failing to disclose under the exceptions to “caveat emptor,” a home seller must make certain disclosures under the law or pay a credit of \$500 to the buyer at closing. While the PCDA requires a seller to complete a standardized disclosure statement and deliver it to the buyer before the buyer signs the final purchase contract, in practice, most home sellers in New York opt not to complete the statement and instead pay the credit.				
Growth Management	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Environmental Protection Ordinance(s)	Yes	Chapter 210, Article XIX – Environmentally Sensitive Sites or Features (10/21/2008)	Local	Village Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Chapter 210, Article XIX establishes special protection from potential adverse environmental impacts through the imposition of appropriate land use controls to ensure that said features are protected to the maximum extent. This ordinance protects watercourses and waterfront areas within the Village, as well as floodways, the Clauseland Mountain ridgeline, steep slope areas, and more.				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Flood Damage Prevention Ordinance	Yes	Chapter 112 – Flood Damage Prevention, CFR60 (12/17/2013)	Federal, State, Local	Floodplain Administrator
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The purpose of chapter 112 is to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas of the Village. The FDPO regulates alteration of natural floodplains, requires protection for new structures that are vulnerable to flood, and more.				
Wellhead Protection	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Emergency Management Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Climate Change Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Other: Freeboard	Yes	State mandated BFE+2 for single and two-family residential construction, BFE+1 for all other construction types	State and Local	Floodplain Administrator
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The Village follows state mandated BFE+2 for single and two-family residential construction, BFE+1 for all other construction types				
Planning Documents				
General/Comprehensive Plan	Yes	Master Plan (2023)	Local	Village Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The master plan outlines the Village’s goals for safe community development and economic development. This plan was recommended as an action for the Village and builds on themes identified in the Local Waterfront Revitalization Plan (LWRP). This plan is still underway, and next steps include drafting a series of goals and implementation recommendations for the Village based on public and stakeholder feedback.				
As of writing this plan, the Village has completed a first draft of an updated Comprehensive Plan that focuses on resiliency, mitigation, and sustainability in the era of climate change. The Village received funding from FEMA’s BRIC Program and grants from NSY DOC and NYS DEC to complete this work. The updated plan integrates many aspects of mitigation reviewed in this HMP update.				
Capital Improvement Plan	Yes	Informal List	Local	Department of Public Work and Engineering
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The CIP for the Village is an informal list of projects which are overseen by the Department of Public Works and Engineering Department.				
Disaster Debris Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Floodplain Management or Watershed Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Stormwater Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Open Space Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Urban Water Management Plan	Yes	Local Waterfront Revitalization Plan (LWRP) (2018)	Local	Village Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The LWRP builds on the work of the Resiliency Task Force that was formed immediately after Superstorm Sandy and engaged in numerous workshops and community outreach. This plan provides recommended legislative and zoning changes that will continue to strengthen the resilience of our waterfront and improve access to the Hudson.				
Habitat Conservation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Economic Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Community Wildfire Protection Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Community Forest Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> <i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Transportation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Agriculture Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Climate Action/ Resiliency/Sustainability Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Tourism Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Business/ Downtown Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Other (for example NYRCR, etc.)	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Response/Recovery Planning				
Comprehensive Emergency Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Continuity of Operations Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Substantial Damage Response Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Threat & Hazard Identification & Risk Assessment	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Post-Disaster Recovery Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Public Health Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

Development and Permitting Capability

Table 9.15-3 summarizes the capabilities of Piermont to oversee and track development.

Table 9.15-3. Development and Permitting Capability

Indicate if your jurisdiction implements the following	Yes/No	Comment:
Do you issue development permits? <ul style="list-style-type: none"> If you issue development permits, what department is responsible? If you do not issue development permits, what is your process for tracking new development? 	Yes	The Building Department is responsible for issuing development permits and tracking new development.
Are permits tracked by hazard area? (For example, floodplain development permits.)	No	

Indicate if your jurisdiction implements the following	Yes/No	Comment:
Do you have a buildable land inventory? <ul style="list-style-type: none"> If you have a buildable land inventory, please describe 	No	
Describe the level of build-out in your jurisdiction.	N/A	The Village practices sustainable build-out to ensure safe growth and development of lands within the Village.

Administrative and Technical Capability

Table 9.15-4 summarizes potential staff and personnel resources available to Piermont and their current responsibilities that contribute to hazard mitigation.

Table 9.15-4. Administrative and Technical Capabilities

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
<i>Administrative Capability</i>		
Planning Board	Yes	The Planning Board meets on the second Monday of each month at 7:00 p.m. in the meeting room at Village Hall. The Planning Board reviews and approves applications for subdivisions and site plans.
Zoning Board of Adjustment	Yes	The Zoning Board of Appeals (ZBA) meets on a third or fourth Thursday (depending on Holidays) of each month at 7:00pm in the Meeting Room in the Village Hall. The Zoning Board of Appeal (ZBA) is an administrative body designed to interpret and to ensure the validity of Piermont Zoning Code and to make determinations on applications for variances from the Code. Piermont zoning code is the community’s guide to its future development and affords the residents and property owners within the community protection from undesirable development. In reviewing the applications for variances, the goal is to avoid incompatibility and to regulate land use, density, and placement of structures, among other issues in a manner consistent with the Code.
Planning Department	No	-
Mitigation Planning Committee	No	-
Environmental Board/Commission	No	-
Open Space Board/Committee	No	-
Economic Development Commission/Committee	No	-
Public Works/Highway Department	Yes	The Department of Public Works of the Village of Piermont has a wide range of responsibilities which are all directed towards the maintenance of the Village infrastructure and the delivery of Village services. The Department of Public Works consists of seven full-time employees whose duties include maintenance of vehicles, general street and road repairs, maintenance of sidewalks, garbage and trash collection, leaf removal, street sweeping, park maintenance, storm drain maintenance, building maintenance and snow plowing.
Construction/Building/Code Enforcement Department	Yes	The Building Department reviews plans and conducts field inspections to ensure compliance with various codes and regulations pertaining to land use and construction on private property. Before beginning any project, consult the building department to determine what permits may be needed.

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
Emergency Management/Public Safety Department	Yes	Piermont Fire Department offers fire and EMS services to the Village; the department is also trained in hazardous materials. The Piermont Police Department seeks to provide the highest level of public service and safety to ensure the quality of life for all Village residents and everyone who passes through the Village by protecting life and property, preventing crime, enforcing laws, and maintaining order for all citizens.
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	Yes	The Department of Public Works of the Village of Piermont has a wide range of responsibilities which are all directed towards the maintenance of the Village infrastructure and the delivery of Village services. The Department of Public Works consists of seven full-time employees whose duties include maintenance of vehicles, general street and road repairs, maintenance of sidewalks, garbage and trash collection, leaf removal, street sweeping, park maintenance, storm drain maintenance, building maintenance and snow plowing.
Mutual aid agreements	No	-
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	No	-
Other: Piermont Waterfront Resiliency Commission	Yes	The Piermont Waterfront Resilience Task Force (PWRTF) was launched after Superstorm Sandy in November 2013 to begin the work of creating a more resilient waterfront. Based on the resilience roadmap outlined by the Task Force, in 2014 the Village created a permanent Village Commission (Piermont Waterfront Resiliency Commission) with the goal of continuing to inform residents and plan for, fund, and build a more resilient future for Piermont.
Other: Sustainable Piermont	Yes	Sustainable Piermont is a community initiative to protect and improve our environment, mitigate the effects of climate change, and lower the Village’s greenhouse gas emissions.
Other: Parks Commission	Yes	The Village of Piermont parks provide both residents and visitors alike a valuable resource for everyone’s enjoyment. The Village prides itself on having one of the most beautiful scenic areas along the mountains and the mighty Hudson River. Outdoor recreation plays a significant role in residents’ lives and, as such, the Village strives to protect and beautify our natural resources and parks. All parks are free and open to the public.
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Brooker Engineering - Consultant
Engineers or professionals trained in building or infrastructure construction practices	Yes	Department of Public Works and Brooker Engineering – Consultant
Planners or engineers with an understanding of natural hazards	Yes	Brooker Engineering –Consultant
Staff with expertise or training in benefit/cost analysis	Yes	Brooker Engineering - Consultant
Professionals trained in conducting damage assessments	Yes	Brooker Engineering - Consultant

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	Yes	Brooker Engineering - Consultant
Environmental scientist familiar with natural hazards	No	-
Surveyor(s)	Yes	Brooker Engineering - Consultant
Emergency Manager	No	-
Grant writer(s)	Yes	Sylvia Welch – Consultant
Resilience Officer	No	-
Other (this could include stormwater engineer, environmental specialist, etc.)	No	-

Fiscal Capability

Table 9.15-5 summarizes financial resources available to Piermont.

Table 9.15-5. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use? (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	Yes
Capital improvements project funding	Yes
Authority to levy taxes for specific purposes	Yes
User fees for water, sewer, gas or electric service	Yes
Impact fees for homebuyers or developers of new development/homes	Yes, money in lieu of land fee for new subdivisions
Stormwater utility fee	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	No
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	No
Other federal or state Funding Programs	Yes
Open Space Acquisition funding programs	Yes
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	No

Education and Outreach Capability

Table 9.15-6 summarizes the education and outreach resources available to Piermont.

Table 9.15-6. Education and Outreach Capabilities

Outreach Resources	Available? (Yes/No)	Comment:
Public information officer or communications office	No	-
Personnel skilled or trained in website development	Yes	Contracted
Hazard mitigation information available on your website	Yes	Information can be found throughout the Village’s website.

Outreach Resources	Available? (Yes/No)	Comment:
Social media for hazard mitigation education and outreach	Yes	The Village has Facebook and Instagram available to se for hazard mitigation education and outreach.
Citizen boards or commissions that address issues related to hazard mitigation	Yes	Piermont Waterfront Resiliency Commission, Sustainable Piermont, Parks Commission
Warning systems for hazard events	Yes	The County utilizes NY-Alert and CodeRed (the backup to NY-Alert) for emergency notifications (all Towns and Villages have access to it).
Natural disaster/safety programs in place for schools	No	-
Organizations that conduct outreach to socially vulnerable populations and underserved populations	No	-
Public outreach mechanisms / programs to inform citizens on natural hazards, risk, and ways to protect themselves during such events	Yes	-
If yes, please describe.	N/A	The Village performs educational outreach through the MS4 program.

Community Classifications

Table 9.15-7 summarizes classifications for community programs available to Piermont.

Table 9.15-7. Community Classifications

Program	Participating? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	No	-	-
New York State Department of Environmental Conservation (NYSDEC) Climate Smart Community	Yes	Bronze	September 26, 2019
National Weather Service Storm Ready Certification	No	-	-
Firewise Communities classification	No	-	-
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable

— = Unavailable

Adaptive Capacity

Adaptive capacity is defined as “the ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or respond to consequences” (IPCC, 2022). Each jurisdiction has a unique combination of capabilities to adjust to, protect from, and withstand a future hazard event, future conditions, and changing risk. Table 9.15-8 summarizes the adaptive capacity for each identified hazard of concern and the Village’s capability to address related actions using the following classifications:

- Strong: Capacity exists and is in use.
- Moderate: Capacity might exist; but is not used or could use some improvement.
- Weak: Capacity does not exist or could use substantial improvement.

Table 9.15-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Disease Outbreak	Moderate
Drought	Moderate
Earthquake	Moderate
Extreme Temperature	Moderate
Flood	Moderate
Landslide	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

9.15.4 National Flood Insurance Program Compliance

This section provides specific information on the management and regulation of the regulatory floodplain, including current and future compliance with the National Flood Insurance Program (NFIP). The floodplain administrator listed in Table 9.15-1 is responsible for maintaining this information.

NFIP Summary

Table 9.15-9 summarizes the NFIP statistics for Piermont.

Table 9.15-9. Village of Piermont NFIP Summary of Policy and Claim Statistics

# Policies	97
# Claims (Losses)	131
Total Loss Payments	\$4,725,881
# Repetitive Loss Properties (NFIP definition)	2
# Repetitive Loss Properties (FMA definition)	15
# Severe Repetitive Loss Properties	3
# Policies Within the 1 percent Annual Chance Flood Boundary	3

NFIP Definition of Repetitive Loss: The NFIP defines a repetitive loss property as any insurable building for which two or more claims of more than \$1,000 were paid by the NFIP within any rolling 10-year period since 1978.

FMA Definition of Repetitive Loss: FEMA’s Flood Mitigation Assistance (FMA) program defines a repetitive loss property as any insurable building that has incurred flood-related damage on two occasions, in which the cost of the repair, on average, equaled or exceeded 25 percent of the market value of the structure at the time of each such flood event.

Definition of Severe Repetitive Loss: A residential property covered under an NFIP flood insurance policy and: (a) That has at least four NFIP claim payments over \$5,000 each, and the cumulative amount of such claims payments exceeds \$20,000; or (b) For which at least two separate claims payments have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building. At least two of the claims must have occurred within any 10-year period, more than 10 days apart.

Source: FEMA, December 2023

Note: RL count may include properties also identified as SRL.

Flood Vulnerability Summary

Table 9.15-10 provides a summary of the NFIP program in Piermont.

Table 9.15-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	52.5 percent of Piermont is mapped by FEMA as being in the 100- or 500-year flood plain (ABFE FEMA Maps adopted in 2014). The Village has adopted the same maps "Special Flood Hazard Area."
Do you maintain a list of properties that have been damaged by flooding?	The Village does not currently keep a list of properties damaged by flooding.
Do you maintain a list of property owners interested in flood mitigation?	The Village has a Neighbor-to-Neighbor list.
How many homeowners and/or business owners are interested in mitigation (elevation or acquisition)?	Approximately 70 people listed.
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what projects are underway.	The Village of Piermont is working on a Comprehensive Plan and has MS4 yearly reports.
How do you make Substantial Damage determinations?	The Building Department in compliance with the New York State Building Code adopted in 2020.
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	Unknown, at this time.
How many properties have been mitigated (elevation or acquisition) in your jurisdiction? • If there are mitigation properties, how were the projects funded?	12 properties mitigated, zero acquired. Funded privately by homeowners.
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If not, state why.	Yes, the flood hazard maps address the flood risk within the Village.
NFIP Compliance	
What local department is responsible for floodplain management?	The Village Building Department.
Are any certified floodplain managers on staff in your jurisdiction?	Yes, the Village has certified floodplain managers on staff.
Do you have access to resources to determine possible future flooding conditions from climate change?	Yes, but they can use improvement.
Does your floodplain management staff need any assistance or training to support its floodplain management program? • If so, what type of assistance/training is needed?	Yes, the Village needs additional training that is available for floodplain management.
Provide an explanation of NFIP administration services you provide (e.g., permit review, GIS, education/outreach, inspections, engineering capability)	The Village has permit and engineering review and requires elevation certificate for any work done in a flood plain. The Village also do community outreach.
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	This is codified in the Village Flood Damage Prevention chapter as 50 percent or more of the assessed value of the home.
What are the barriers to running an effective NFIP program in the community, if any?	Budget is a challenge.
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? • If so, state the violations.	None, at this time.
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	November 8, 2018

NFIP Topic	Comments
What is the local law number or municipal code of your flood damage prevention ordinance?	Chapter 120, 2014. The Village currently has a pending amendment.
What is the date that your flood damage prevention ordinance was last amended?	2014
Does your floodplain management program meet or exceed minimum requirements? <ul style="list-style-type: none"> If exceeds, in what ways? 	Yes, the floodplain management programs meet the minimum requirements at this time.
Are there other local ordinances, plans or programs (e.g., site plan review) that support floodplain management and meeting the NFIP requirements? For instance, does the planning board or zoning board consider efforts to reduce flood risk when reviewing variances such as height restrictions?	Yes, the Village Planning Board does this in the site-review process
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	Yes, the Village would like to join the CRS program but is insufficiently staffed to meet the compliance requirements

9.15.5 Growth/Development Trends

Understanding how past, current, and projected development patterns have or are likely to increase or decrease risk in hazard areas is a key component to appreciating a jurisdiction’s overall risk to its hazards of concern. Recent and expected future development trends, including major residential/commercial development and major infrastructure development, are summarized in Table 9.15-11 through Table 9.15-13.

Table 9.15-11. Number of Building Permits for New Construction Issued Since the Previous HMP

	New Construction Permits Issued			Total
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	
2019				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2020				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2021				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2022				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2023				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0

SFHA = Special Flood Hazard Area (1 percent flood event)

Table 9.15-12. Recent Major Development and Infrastructure from 2018 to Present

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
No major development and infrastructure reported.					

* Only location-specific hazard zones or vulnerabilities identified.

Table 9.15-13. Known or Anticipated Major Development and Infrastructure in the Next Five Years

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
No major development or infrastructure anticipated.					

* Only location-specific hazard zones or vulnerabilities identified.

9.15.6 Jurisdictional Risk Assessment

The hazard profiles in Volume I provide detailed information regarding each planning partner’s vulnerability to the identified hazards, including summaries of the Village of Piermont risk assessment results and data used to determine the hazard ranking. Key local risk assessment information is presented below.

Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Village are shown in Figure 9.15-1 and Figure 9.15-2. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps are provided only for hazards that can be identified clearly using mapping techniques and technologies and for which Piermont has significant exposure. The maps show the location of potential new development, where available.

Figure 9.15-1. Village of Piermont Flood and Dam Inundation Hazard Area Extent and Location

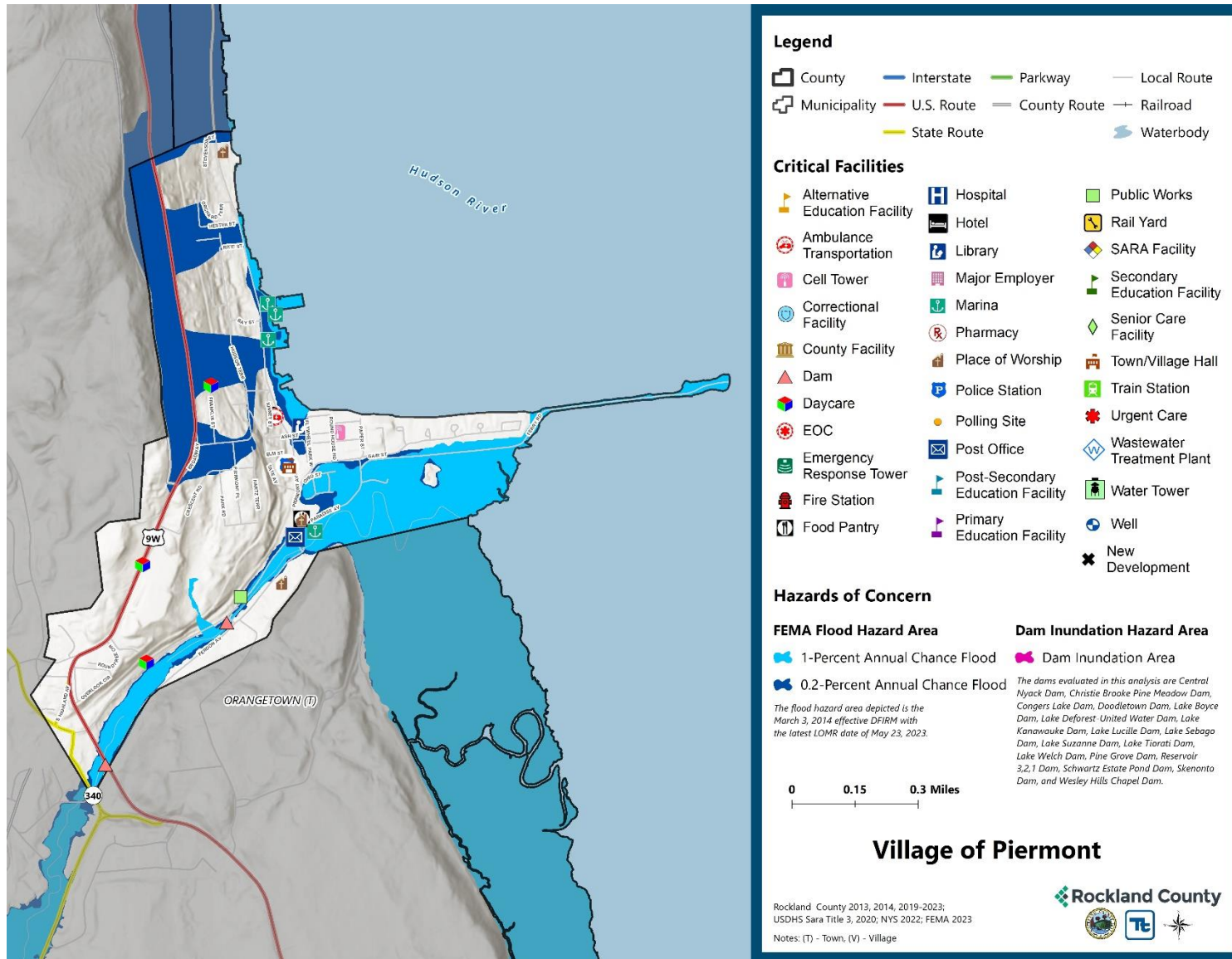
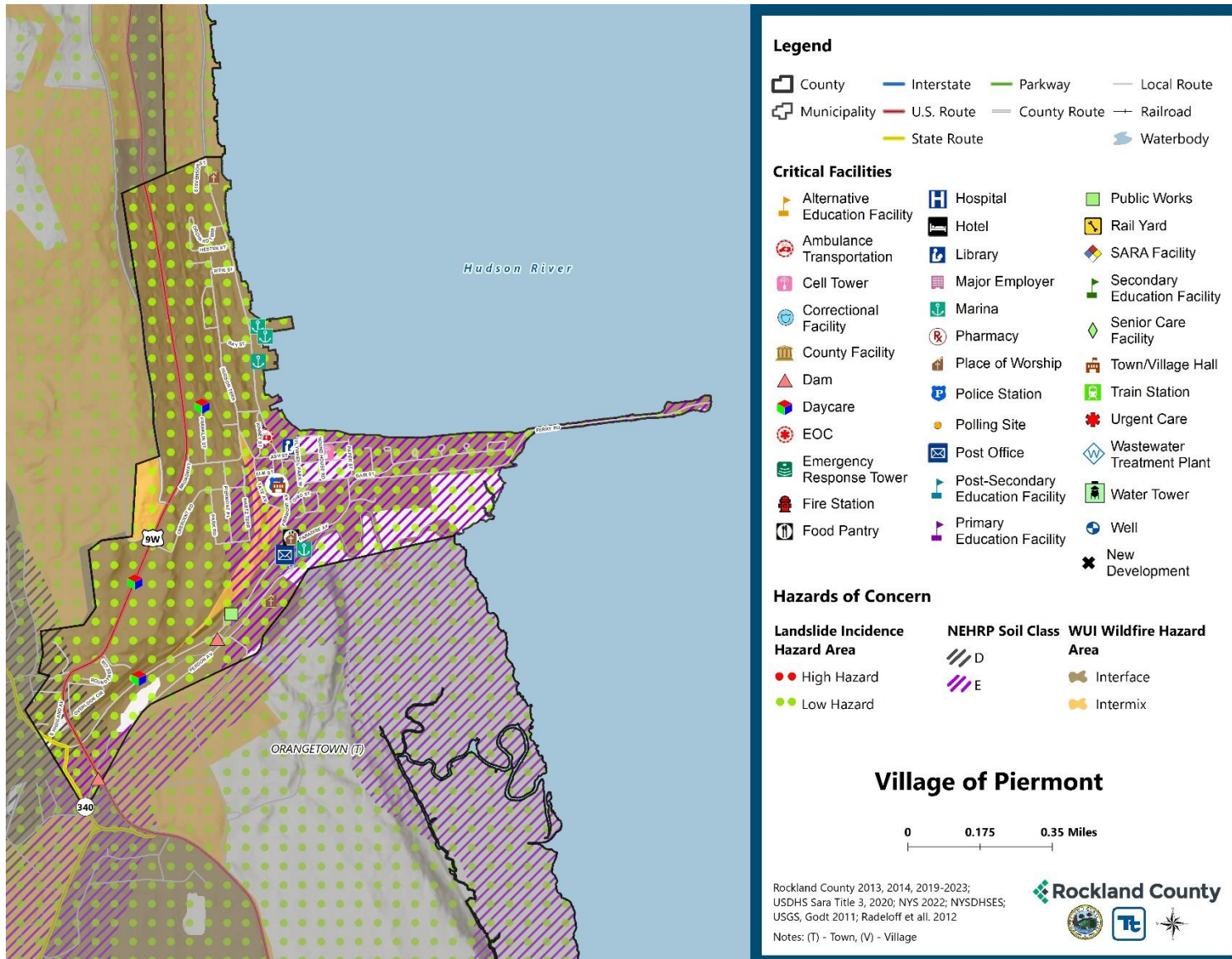


Figure 9.15-2. Village of Piermont Landslide, Earthquake, and Wildfire Hazard Area Extent and Location



Hazard Event History

The history of natural and non-natural hazard events in the Village of Piermont is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 9.15-14 provides details on loss and damage in the Village during hazard events since the last hazard mitigation plan update.

Table 9.15-14. Hazard Event History in the Village of Piermont

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Summary of Damage and Losses in the Village
Jan 20, 2020 - May 11, 2023	New York Covid-19 (3434-EM-NY, 4480-DR-NY)	Yes	The Covid-19 pandemic resulted in nationwide shutdowns, social distancing and masking requirements, and immunization efforts. Since the start of the pandemic, roughly 950 deaths have been reported in Rockland County. The federal Public Health Emergency expired in May 2023, but illness continues to occur as the virus shifts to becoming endemic.	Piermont experienced Covid positive cases and deaths during this time.
April 13, 2020	Extreme Wind	N/A	High winds across the county led to downed trees power outages, closed roads, and approximately \$200,000 in property damage.	Piermont was affected by this storm.
August 4, 2020	New York Tropical Storm Isaias (4567-DR-NY)	Yes	The center of Isaias passed about 65 miles west of New York City at 3 pm on August 4, 2020. Tropical storm force winds extended well east of the center of circulation. In addition, 1 to 3 inches of rainfall, highest west, were recorded across the county. These types of winds and rainfall across the area resulted in numerous trees and tree limbs being downed, power outages, damages to homes and automobiles, and disruption to transit.	The Village of Piermont experienced damage and flooding.
August 21-24, 2021	New York Hurricane Henri (3565-EM-NY)	Yes	Rainfall from Tropical Storm Henri resulted in widespread flash flooding across southeastern New York, particularly portions of the Lower Hudson Valley. Rainfall totals generally ranged from two to five inches, with this rain coming in addition to the two to five inches that fell during the predecessor rainfall event the night before.	The Village of Piermont experienced damage and flooding.
September 1-3, 2021	New York Remnants of Hurricane Ida (3572-EM-NY, 4615-DR-NY)	Yes	Extremely heavy rainfall associated with the remnants of Hurricane Ida overspread southeast New York during the evening of September 1 and continued through the early morning hours of September 2. Rainfall totals ranged from five to eight inches across much of the region, with much of that rain falling in just a few hours. This resulted in widespread catastrophic flash flooding.	The Village of Piermont experienced damage and flooding.

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Summary of Damage and Losses in the Village
July 9 – 10, 2023	Severe Storm	N/A	Severe storms and flooding resulted in road closures, including portions of the Palisades Interstate Parkway, throughout Rockland County.	The Village of Piermont experienced damage and flooding.

EM = Emergency Declaration (FEMA)
 FEMA = Federal Emergency Management Agency
 DR = Major Disaster Declaration (FEMA)
 N/A = Not applicable

Hazard Ranking and Vulnerabilities

The hazard profiles in Volume I have detailed information regarding each planning partner’s vulnerability to the identified hazards. The following summarizes presents key risk assessment results for the Village of Piermont.

Hazard Ranking

The participating jurisdictions have differing degrees of vulnerability to the hazards of concern, so each jurisdiction ranked its own degree of risk to each hazard. The community-specific hazard ranking is based on problems and impacts identified by the risk assessment presented in Volume I. The ranking process involves an assessment of the likelihood of occurrence for each hazard; the potential impacts of the hazard on people, property, and the economy; community capabilities to address the hazard; and changing future climate conditions. Piermont reviewed the County hazard ranking and individual results to assess the relative risk of the hazards of concern to the community. During the review of the hazard ranking, the Village agreed with the following hazard rankings included in Table 9.15-15.

Table 9.15-15 shows Piermont’s final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 9.15-15. Hazard Ranking

Hazard	Rank
Dam Failure	Low
Disease Outbreak	Medium
Drought	Medium
Earthquake	Medium
Extreme Temperature	Medium
Flood	High
Landslide	Low
Severe Weather	High
Severe Winter Weather	High
Wildfire	Medium

Note: The scale is based on the hazard rankings established in Volume I, modified as appropriate based on review by the jurisdiction

Critical Facilities

Table 9.15-16 identifies critical facilities in the community located in the 1 percent and 0.2 percent annual chance floodplains.

Table 9.15-16. Critical Facilities Flood Vulnerability

Name	Type	Exposure		Addressed by Proposed Action	Already Protected to 0.2 percent Flood Level (describe protections)
		1 percent Event	0.2 percent Event		
Boss Pond Dam	Dam	Yes	Yes	2024-PiermontV-12	No
Piermont Paper Company Dam	Dam	Yes	Yes	2024-PiermontV-12	No
Piermont Post Office	Post Office	Yes	Yes	2024-PiermontV-12	No
T and R Marina, Inc.	Marina	Yes	Yes	2024-PiermontV-12	No
Paradise Boats	Marina	Yes	Yes	2024-PiermontV-12	No

Source: Rockland County 2023, FEMA

There are no High Hazard Potential dams in the Village of Piermont, and none of the dam inundation areas intersect with the Village’s boundaries.

Identified Issues

After review of the Village of Piermont’s hazard event history, hazard rankings, hazard location, and current capabilities, the Village of Piermont identified the following vulnerabilities within their community:

- Old drainage system cannot adequately manage stormwater flows and increases risk of flooding to residential area.
- Drainage issues occur every year - needs to be cleaned constantly, if not cleared then the area will flood.
- The current comprehensive plan does not incorporate natural disaster mitigation techniques.
- Flood prone roads can inhibit emergency response and evacuation during a flood.
- The Village is not in the CRS program.
- The Village does not have a comprehensive emergency management plan.
- Critical facilities located in the floodplain are not only susceptible to flood damage but also create unnecessary complications for the municipality during an emergency event and post-disaster recovery.
- Sea level rise flooding of low-lying residential areas.
- Diminished capacity and structural integrity of T dock limits expansion of commercial and recreational river access and creates potential public safety issues. Future sea level rise and storm events threaten to damage current dock beyond repair.
- Waterfront Flooding along Hudson and Sparkill increasing in frequency.
- 52.5 percent of Piermont is in the 100- or 500-year floodplain.

9.15.7 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and prioritizes actions to address over the next five years.

Past Mitigation Initiative Status

Table 9.15-17 indicates progress on the Village's mitigation strategy identified in the 2019 HMP. Actions that are still recommended but not completed or that are in progress are carried forward and combined with new actions as part of the mitigation strategy for this plan update. Previous actions that are now ongoing programs and capabilities are indicated as such and are presented in the capability assessment earlier in this annex.

Additional Mitigation Efforts

In addition to the mitigation initiatives completed in Table 9.15-17, Piermont identified the following mitigation efforts completed since the last HMP:

- Constructed check valve on outfall by Bridge Street to prevent tidal backflow.
- Piermont Waterfront Resiliency Commission established in 2018.
- Installed backup generator for firehouse and created EOC communications center at firehouse, upgraded radio system.
Installed check valve for Paradise stormwater outflow.
- Continuing ongoing discussions with local utilities regarding resilience and recovery.
- Pursued relocation options for critical emergency services.
- Created topographic map with structures and ABFE, SLR scenarios.
- Publicized Stevens institute tide prediction site and Scenic Hudson SLR mapper.
- Sent notifications about hazards to residents via email and SMS.
- Created and curated PWRC social media presence with research and case studies of resilience building.
- Doors replaced at boathouse.
- Evaluated risks for village owned properties and suggested relocation options, pending funding.
- Informed residents and property owners of current flood risk and SLR estimates.
- Adopted 2020 NYS building code updates including ABFE.
- Amended building code to use updated ABFE maps and NY state freeboard +1-foot requirements for all new construction and substantial improvements.
- Drainage improvements made to north parking lot and upgraded outfall system.
- Planned for CRS qualification, updating codes and zoning regulations for enhanced resiliency. Met with consultants to determine plan of action.

Since the adoption of the County's first HMP, Piermont has made significant mitigation progress in the following areas:

- Public outreach and engagement.
- Nature-based solutions to hazard mitigation.
- Community Rating System qualification.
- Critical infrastructure upgrades.

Table 9.15-17. Status of Previous Mitigation Actions

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
Piermont-1	North Parking Lot Drainage Improvements	Flooding, Severe Storm	Engineering	Poor drainage and an inadequate outfall have increased the flood risk to the area. Upgrade or replace the inadequate drainage system and outfall to manage current stormwater runoff amounts.	1. Completed 2. Check valve installed on outflow vault.	1. Discontinue 2. N/A 3. Completed
Piermont-2	Paradise Avenue Outfall Modifications	Flooding, Severe Storm	Engineering	Tidal backflow is entering the outfall and causing flooding in the surrounding residential area. Check valve and berm will be constructed to prevent the backflow of water during high tide.	1. Completed 2. Check valve for Paradise stormwater outfall installed	1. Discontinue 2. N/A 3. Completed
Piermont-3	Drainage Improvements to Erie Path	Flooding, Severe Storm	Engineering	Old drainage system cannot adequately manage stormwater flows and increases risk of flooding to residential area. Upgrade or replace the out-of-date drainage system to manage current stormwater runoff amounts.	1. In Progress 2. Applied for grant for engineering study for improvements on Ritie St. stormwater extension from Erie path. BRIC funding application in process, new streamlined and upsized stormwater management engineered, easements pending.	1. Include 2. Pending BRIC funding award - Upgrade or replace the out-of-date drainage system to manage current stormwater runoff amounts. 3. N/A

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
Piermont-4	Bridge Street Outfall Modifications	Flooding, Severe Storm	Engineering	Tidal backflow is entering the outfall and causing flooding in the surrounding residential area. Check valve and berm will be constructed to prevent the backflow of water during high tide.	1. Completed 2. Check valve installed on outflow vault	1. Discontinue 2. N/A 3. Completed
Piermont-5	Drainage Improvements to Tweed Blvd. to Route 9W	Flooding, Severe Storm	Engineering	Drainage issues occur every year - needs to be cleaned constantly, if not cleared then the area will flood. Improvements will be made to ensure debris cannot block stormwater flows.	1. In Progress 2. Seeking funding for engineering study	1. Include 2. Pending funding award for engineering study to conduct improvements to drainage areas on Tweed Blvd. to Route 9W to ensure debris cannot block stormwater flows. 3. N/A
Piermont-6	Comprehensive Plan Update	All Hazards	CPG member; Village Trustee	The current comprehensive plan does not incorporate natural disaster mitigation techniques. Ensure that local comprehensive plans incorporate natural disaster mitigation techniques through a courtesy review or draft plans by the County Planning Department.	1. In Progress 2. Seeking funding to develop a comprehensive master plan incorporating SLR and climate change related fluvial and riverine flood. DOS and FEMA BRIC funding secured; RFP issued	1. Include 2. Pending additional funding for comprehensive master plan to incorporate sea level rise and climate change related fluvial and riverine flood. DOS and FEMA BRIC funding secured; RFP issued. 3. N/A

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
Piermont-7	GIS Online Mapping	All Hazards	CPG member; Village Trustee	Lack of public knowledge on the spatial extent of hazards. Provide GIS hazard information online for residents and others in the community to view the Village's hazard vulnerabilities.	1. Completed 2. Create topographic map with structures and ABFE, SLR scenarios. Publicize Stevens institute tide prediction site and Scenic Hudson SLR mapper. Send notifications about hazards to residents via email and SMS. Create and curate PWRC social media presence with research and case studies of resilience building	1. Discontinued 2. N/A 3. Completed
Piermont-8	Maintain List of Repetitive Flood Property	Flooding, Severe Storm	CPG member; Village Trustee	Repetitively flooded properties place an undue stress on the property owner and village and efforts should be made to mitigate them. Identify and document repetitively flooded properties. Work with owners to explore mitigation opportunities for repetitively flooded properties, and if appropriate and feasible, carry out acquisition, relocation, elevation and floodproofing measures to protect these properties.	1. Ongoing 2. Identified NFIP rep loss properties and rep loss properties not insured by NFIP. Created program to train residents to facilitate adaptation conversations with neighbors in impacted areas. Administered programs to disseminate information about adaptation, mitigation, and relocation to residents. Create mailing list for X zone residents and sent out mailing advising to consider flood insurance. Published article in local newsletter	1. Discontinue 2. N/A 3. Ongoing capability

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
Piermont-9	Flood Prone Road Mitigation Measures	Flooding, Severe Storm	CPG member; Village Trustee	<p>Flood prone roads can inhibit emergency response and evacuation during a flood.</p> <p>Develop specific mitigation solutions for flood prone road systems (roads, bridges, intersections, drainage, etc.) under the leadership of County DPW.</p>	<p>1. In Progress</p> <p>2. 2018 Ferry Road elevation 2021 inter-agency meeting - County, DOT, Orangetown - requested specific and general stormwater management improvements on Tweed Blvd. (County), 9w(DOT), and River Road (County) 2022 shoreline stabilization and erosion mitigation on south side of pier 2023 salt tolerant tree and shrub plantings on north and south side of pier to reduce erosion and establish buffer</p>	<p>1. Include</p> <p>2. A mitigation solution meeting was held (2018 Ferry Road elevation 2021 inter-agency meeting - County, DOT, Orangetown). Several mitigation actions were implemented on Tweed Blvd., 9W, and River Road in 2022. Other mitigation actions were implemented in 2023 on south side of pier. Further projects and discussions needed.</p> <p>3. N/A</p>
Piermont-10	Critical Facilities Protection	Flooding, Severe Storm	CPG member; Village Trustee	<p>If facilities were built before a certain date, they could be more susceptible to damage from a hazard event.</p> <p>Determine the year built and level of protection for critical emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide some degree of protection from natural hazards and pursue potential mitigation opportunities to protect these sites as funding becomes available.</p>	<p>1. Completed</p> <p>2. Pursuing relocation options for critical emergency services.</p>	<p>1. Discontinued</p> <p>2. N/A</p> <p>3. Completed</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
Piermont-11	Review Village Codes	All Hazards	Jurisdictional CPG member	<p>New vulnerabilities could have emerged, or existing vulnerabilities could have worsened, which could warrant a code update.</p> <p>The Village would like to review and potentially update their existing local codes/ordinances against the identified hazards to determine whether there needs to be any amendments to address identified hazards and, where a need is identified; modify/amend the codes/ordinances as applicable.</p>	<p>1. Completed</p> <p>2. Amended building code to use updated ABFE maps and NY state freeboard +1-foot requirements for all new construction and substantial improvements - adopted 202 NYS building code updates including ABFE</p>	<p>1. Discontinued</p> <p>2. N/A</p> <p>3. Completed</p>
Piermont-12	Community Rating System	Flooding	Village Board; Building Department	<p>The Village is not in the CRS program.</p> <p>Join the Community Rating System (CRS).</p>	<p>1. In Progress</p> <p>2. CAV completed, CAV issues addressed, application review submitted. Consultant hired; initial meeting completed. Consultant report prepared, reviewed. Internal Building department improvements needed, staff training needs floodplain management, recordkeeping improvements, coordination with village engineer</p>	<p>1. Include</p> <p>2. CAV has been completed and steps have been taken to receive CRS credit. Internal Building department improvements will be conducted; staff training will obtain floodplain managements recordkeeping improvements; increased coordination with village engineer.</p> <p>3. N/A</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
Piermont-13	Improve Emergency Communication in the Village	All Hazards	Village Board	<p>Poor communication can cause issues to the preparation and response to an emergency event.</p> <p>This action will contain the following:</p> <ul style="list-style-type: none"> • Inform residents of nixle.com • Organize neighborhood networks for emergency communications, and preparedness training and planning. • Implement a more robust alert/communication system, including capacity for communications during emergencies with power outages. 	<ol style="list-style-type: none"> 1. Completed 2. Installed backup generator for firehouse and created EOC communications center at firehouse, upgraded radio system 	<ol style="list-style-type: none"> 1. Discontinued 2. N/A 3. Completed

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
Piermont-14	Comprehensive Emergency Management Plan Development	All Hazards	Planning Board	<p>The Village does not have a comprehensive emergency management plan.</p> <p>This plan should include an evacuation plan, designated upland parking areas, procedures for securing loose floating assets, procedures for debris removal, procedures for providing human services, procedures for shutoff and restoration of gas service, emergency communication systems, emergency backup power, framework for staff and volunteer training and drilling exercises, regular notification to owners and residents in current and projected future floodplains regarding risks to their properties and the availability of preparedness resources.</p>	<ol style="list-style-type: none"> In Progress Draft created, waiting on HAZNY review 	<ol style="list-style-type: none"> Include Waiting on HAZNY review, to fully adopt CEMP. N/A

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
Piermont-15	Utility Resilience	All Hazards	Village Board	<p>Utilities can be susceptible to various hazards and can cause complications during and after an event if damaged.</p> <p>The Village needs to understand/inform the utilities' plans in relation to communication protocols and infrastructure's operational and physical resilience to future storms and floods. Items to discuss utility shutoff and turn-on protocols, timing upgrades to subsurface infrastructure, and relocating overhead utilities to underground.</p>	<p>1. Completed</p> <p>2. Ongoing discussions with local utilities regarding resilience and recovery</p>	<p>1. Discontinued</p> <p>2. N/A</p> <p>3. Completed</p>
Piermont-16	Flooding and Storm Resilience Committee Development	All Hazards	Village Board	<p>The Village does not have a Flooding and Storm Resilience Committee.</p> <p>This committee will work to ensure implementation of Task Force recommendations, support long-range planning, and track and publicize the village's progress toward meeting the goals of the recommendations of the Resilience Roadmap: Planning for Piermont's Future.</p>	<p>1. Completed</p> <p>2. Piermont Waterfront Resiliency Commission established 2018</p>	<p>1. Discontinued</p> <p>2. N/A</p> <p>3. Completed</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
Piermont-17	Critical Facility Located in Floodplain	Flooding	Post Office with support from the Village Board	<p>Critical facilities located in the floodplain are not only susceptible to flood damage but also create unnecessary complications for the municipality during an emergency event and post-disaster recovery.</p> <p>Critical facilities in the Village are vulnerable to the flood hazard as per the Rockland County HMP risk assessment. For the facilities that the Village has jurisdiction, the Village will evaluate and determine next actions in terms of a feasible and cost-effective mitigation action. For the facilities that the Village does not have jurisdiction over this facility to mitigate, the Village will notify the facility manager/operator regarding the flood vulnerability, potential mitigation actions to reduce flood losses and potential funding sources for implementation.</p>	<p>1. Completed</p> <p>2. Evaluated risks for village owned properties and suggested relocation options, pending funding. Informed residents and property owners of current flood risk and SLR estimates. Updated code to reflect new ABFE elevations and NY state recommendations for elevation in flood zones, added 1 foot freeboard. Adopted 2020 NYS building code updates including ABFE.</p>	<p>1. Discontinued</p> <p>2. N/A</p> <p>3. Completed</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
Piermont-18	Fire Department Boathouse Mitigation Measures	All Hazards	Village Board	<p>Critical facilities located in the floodplain are not only susceptible to flood damage but also create unnecessary complications for the municipality during an emergency event and post-disaster recovery.</p> <p>Installation of breakwaters (stones) to help dissipate velocity of the waves; Replacing doors would help to prevent floodwaters from entering the facility.</p>	<p>1. Completed 2. Doors replaced at boathouse - breakwaters challenging to get permitted</p>	<p>1. Discontinued 2. N/A 3. Completed</p>
Piermont-19	Elevation of Electrical Components at DPW	All Hazards	Village Board	<p>Critical facilities located in the floodplain are not only susceptible to flood damage but also create unnecessary complications for the municipality during an emergency event and post-disaster recovery.</p> <p>Determine the 500-year flood elevation at the DPW and elevate the electrical components to protect against damage from flood waters.</p>	<p>1. No Progress 2. reviewing options and costs</p>	<p>1. Include 2. Determine the 500-year flood elevation at the DPW and elevate the electrical components to protect against damage from flood waters. 3. N/A</p>
Piermont-20	Displaced Residents	Flood	PWRC	<p>Sea level rise flooding of low-lying residential areas.</p> <p>Secure land suitable for relocation of displaced residences outside of ABFE.</p>	<p>1. In Progress 2. Explore sale options with school district for SOSCD TZE campus</p>	<p>1. Include 2. Secure land suitable for relocation of displaced residences outside of ABFE. Explore sale options with school district for SOSCD TZE campus. 3. N/A</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
Piermont-21	Emergency Response Relocation	Flood	PWRC	Unable to respond due to flooded roads. Explore options for relocating emergency services to Hudson Terrace Community Center location to improve response capability in flood events.	1. Discontinued 2. FEMA x zone - 2021 extensive flooding and damage in proposed project area, not suitable location for emergency services with increasing pluvial hillside rainfall flooding events	1. Discontinued 2. N/A 3. Relocation not a feasible option.
Piermont-22	CRS Qualification	Flood	Village	Increased costs of NFIP insurance related to Risk Rating 2.0 Planning for CRS qualification, updating codes and zoning regulations for enhanced resiliency.	1. Completed 2. Seeking consultant to finalize CRS application, recommend additional code updates >Tetra Tech produced a report outlining things we could do to qualify for the CRS program in 2020 >Implementing the actions currently unfunded	1. Discontinued 2. N/A 3. Completed
Piermont-23	T Dock Structural Integrity	Flood, Severe Storm	Village Board	Diminished capacity and structural integrity of T dock limits expansion of commercial and recreational river access and creates potential public safety issues. Future sea level rise and storm events threaten to damage current dock beyond repair. Secure funding for design and construction of replacement pier dock to address structural integrity issues identified in 2018 blue shore engineering assessment, and plan for future sea level rise and storm surge events.	1. No Progress 2. N/A	1. Include 2. Secure funding for design and construction of replacement pier dock to address structural integrity issues identified in 2018 blue shore engineering assessment, and plan for future sea level rise and storm surge events. 3. N/A

Proposed Hazard Mitigation Initiatives for the HMP Update

Piermont participated in the mitigation strategy workshop for this HMP to identify appropriate actions to include in a local hazard mitigation strategy. Its comprehensive consideration of all possible activities to address hazards of concern included review of the following FEMA documents:

- FEMA 551 “Selecting Appropriate Mitigation Measures for Floodprone Structures” (March 2007)
- FEMA “Mitigation Ideas—A Resource for Reducing Risk to Natural Hazards” (January 2013).

The action worksheets included at the end of this annex list the mitigation actions that Piermont would like to pursue in the future to reduce the effects of hazards. The actions are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in the Village’s priorities.

Table 9.15-18 indicates the range of proposed mitigation action categories. The four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table to further demonstrate the wide range of activities and mitigation measures selected.

Volume I identifies 14 evaluation criteria for prioritizing the mitigation actions. To assist with rating each mitigation action as high, medium, or low priority, a numeric rank is assigned (-1, 0, or 1) for each of the evaluation criteria. Table 9.15-19 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Table 9.15-18. Analysis of Mitigation Actions by Hazard and Category

Hazard	Actions That Address the Hazard, by Action Category									
	FEMA				CRS					
	LPR	SIP	NSP	EAP	PR	PP	PI	NR	SP	ES
Dam Failure	2	-	-	-	2	-	-	-	-	-
Disease Outbreak	2	-	-	-	2	-	-	-	-	-
Drought	2	-	-	-	2	-	-	-	-	-
Earthquake	2	-	-	-	2	-	-	-	-	-
Extreme Temperature	2	-	-	-	2	-	-	-	-	-
Flood	2	8	-	2	7	1	2	-	2	-
Landslide	2	-	-	-	2	-	-	-	-	-
Severe Weather	2	6	-	1	5	1	1	-	2	-
Severe Winter Weather	2	-	-	-	2	-	-	-	-	-
Wildfire	2	-	-	-	2	-	-	-	-	-

Local Plans and Regulations (LPR)—These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.

Structure and Infrastructure Project (SIP)—These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct structures to reduce the impact of hazards.

Natural Systems Protection (NSP)—These are actions that minimize damage and losses and preserve or restore the functions of natural systems.

Education and Awareness Programs (EAP)—These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities

Preventative Measures (PR)—Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.

Property Protection (PP)—These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.

Public Information (PI)—Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.

Natural Resource Protection (NR)—Actions that minimize hazard loss and preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.

Structural Flood Control Projects (SP)—Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.

Emergency Services (ES)—Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities

Table 9.15-19. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Other Community Objectives	Total	High / Medium / Low
2024-PiermontV-01	Drainage Improvements to Erie Path	1	1	1	0	0	0	1	1	0	1	1	1	1	1	10	Medium
2024-PiermontV-02	Drainage Improvements to Tweed Blvd. to Route 9W	1	1	1	0	0	0	1	1	0	1	1	1	1	1	10	Medium
2024-PiermontV-03	Comprehensive Plan Update	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	High
2024-PiermontV-04	Flood Prone Road Mitigation Measures	1	1	1	0	0	0	0	1	1	1	1	1	1	1	10	Medium
2024-PiermontV-05	Community Rating System	1	1	1	0	0	1	0	1	1	1	1	1	1	1	11	High
2024-PiermontV-06	Comprehensive Emergency Management Plan Development	1	1	1	0	1	1	0	1	1	1	1	1	1	1	13	High
2024-PiermontV-07	Elevation of Electrical Components at DPW	1	1	1	0	0	1	0	1	1	1	1	1	1	1	12	High
2024-PiermontV-08	Displaced Residents	1	1	1	0	1	0	0	1	1	1	1	1	1	1	11	High
2024-PiermontV-09	T Dock Structural Integrity	1	1	1	0	0	0	0	0	0	1	1	1	1	1	8	Medium
2024-PiermontV-10	Elevate Roadways	1	1	1	1	1	0	1	0	1	1	1	1	1	1	12	High
2024-PiermontV-11	Drainage and Culvert Upgrades	1	1	0	1	0	0	0	0	0	1	1	1	0	1	7	Medium
2024-PiermontV-12	Critical Facilities in the Floodplain	1	1	1	0	0	1	0	0	0	1	0	1	1	0	7	Medium

Note: Volume I, Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14).

Action 2024-PiermontV-01. Drainage Improvements to Erie Path

Action Name:	2024-PiermontV-01. Drainage Improvements to Erie Path		
Description of the Problem:	Old drainage system cannot adequately manage stormwater flows and increases risk of flooding to residential area.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	Pending BRIC funding award - Upgrade or replace the out-of-date drainage system to manage current stormwater runoff amounts.		
Lead Agency:	DPW		
Supporting Agencies:	N/A		
Estimated Cost:	High (> \$100,000)		
Potential Funding Sources:	Municipal budget; Grant funding		
Implementation Timeline:	Short Term (<5 years)		
Goals Met:	1, 2, 4		
Benefits:	High (> \$100,000)		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	This action will protect socially vulnerable populations by lessening stormwater impacts in this residential area.		
Impact on Critical Facilities/Lifelines:	Increased resiliency for drainage systems will ensure roadways and infrastructure in this area are protected from flooding impacts.		
Impact on Capabilities	This action will ensure stormwater management capabilities within the Village remain operational.		
Impact on Future Development:	N/A		
Climate Change Considerations:	Climate change is expected to exacerbate flooding and severe storm events which will impacts stormwater systems. This action will mitigate those impacts to these systems to ensure operations continue.		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low

Alternatives	Action	Evaluation
	Do nothing.	Problem persists or worsens.
	Relocate residential buildings.	Costly, time consuming, not feasible.
	Add additional stormwater drainage systems.	Costly, old systems still not functional.

Action 2024-PiermontV-02. Drainage Improvements to Tweed Blvd. to Route 9W

Action Name:	2024-PiermontV-02. Drainage Improvements to Tweed Blvd. to Route 9W	
Description of the Problem:	Drainage issues occur every year - needs to be cleaned constantly, if not cleared then the area will flood.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	Pending funding award for engineering study to conduct improvements to drainage areas on Tweed Blvd. to Route 9W to ensure debris cannot block stormwater flows.	
Lead Agency:	Engineering	
Supporting Agencies:	N/A	
Estimated Cost:	High (> \$100,000)	
Potential Funding Sources:	Municipal budget; Grant funding	
Implementation Timeline:	Short Term (<5 years)	
Goals Met:	1, 2, 4	
Benefits:	High (> \$100,000)	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	This action will protect socially vulnerable populations by lessening stormwater impacts in this residential area.	
Impact on Critical Facilities/Lifelines:	Increased resiliency for drainage systems will ensure roadways and infrastructure in this area are protected from flooding impacts.	
Impact on Capabilities	This action will ensure stormwater management capabilities within the Village remain operational.	
Impact on Future Development:	N/A	

Climate Change Considerations:	Climate change is expected to exacerbate flooding and severe storm events which will impacts stormwater systems. This action will mitigate those impacts to these systems to ensure operations continue.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	Do nothing.		Problem persists or worsens.
	Relocate residential buildings.		Costly, time consuming, not feasible.
	Clean out existing drainage systems.		Short-term solution.

Action 2024-PiermontV-03. Comprehensive Plan Update

Action Name:	2024-PiermontV-03. Comprehensive Plan Update	
Description of the Problem:	The current comprehensive plan does not incorporate hazard mitigation principles and does not have a strategy to streamline the consideration of the following hazards into its future development and growth: dam/levee failure, disease outbreak, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, or wildfire.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	Pending additional funding for comprehensive master plan to incorporate sea level rise and climate change related fluvial and riverine flood. DOS and FEMA BRIC funding secured; RFP issued.	
Lead Agency:	PWRC	
Supporting Agencies:	CPG member	
Estimated Cost:	High (> \$100,000)	
Potential Funding Sources:	Municipal Budget	
Implementation Timeline:	Short Term (<5 years)	
Goals Met:	1, 2, 3, 5, 7	
Benefits:	High (> \$100,000)	
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Natural disasters affect everyone in the community, and an outdated comprehensive plan would leave socially vulnerable populations at risk to natural disaster events,	

Impact on Critical Facilities/Lifelines:	Updating the comprehensive plan to include natural disasters will help critical facilities and lifelines be more resilient to impacts and can continue to function properly for the wellbeing of the community.		
Impact on Capabilities	The comprehensive plan update will help strengthen the local capabilities of the emergency response departments and staff to know what to do during a natural disaster event.		
Impact on Future Development:	An updated comprehensive plan will help plan for future development in being more resilient to natural disaster events.		
Climate Change Considerations:	The updated comprehensive plan will consider climate change impacts when looking at ways to mitigate natural disaster events. This will limit climate change impacts on the community.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	Do nothing.		Comprehensive plan will be outdated, and the community will not be prepared for natural disasters.
	Update the Comprehensive Plan without adding natural disasters.		Costly, community will not be prepared for natural disasters.
	Start over for the entire Comprehensive Plan.		Costly, long timeline.

Action 2024-PiermontV-04. Flood Prone Road Mitigation Measures

Action Name:	2024-PiermontV-04. Flood Prone Road Mitigation Measures	
Description of the Problem:	Flood prone roads can inhibit emergency response and evacuation during a flood.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	A mitigation solution meeting was held (2018 Ferry Road elevation 2021 inter-agency meeting - County, DOT, Orangetown). Several mitigation actions were implemented on Tweed Blvd., 9W, and River Road in 2022. Other mitigation actions were implemented in 2023 on south side of pier. Further projects and discussions are needed to mitigate all flood prone roads in the Village.	
Lead Agency:	Village Trustee	
Supporting Agencies:	CPG member	
Estimated Cost:	High (> \$100,000)	
Potential Funding Sources:	Municipal budget; County funding; Grant funding	
Implementation Timeline:	Short Term (<5 years)	
Goals Met:	1, 2, 4	
Benefits:	High (> \$100,000)	

Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Vulnerable communities that would typically lose access to transportation options and potable water will be less likely to suffer damage or service interruptions.	
Impact on Critical Facilities/Lifelines:	Transportation routes are more likely to remain functional during heavy rain or flooding events.	
Impact on Capabilities	Emergency vehicles and first responders will have sufficient access to communities to render aid when needed.	
Impact on Future Development:	Areas with resilient infrastructure encourage residential and commercial development and improve economic resiliency.	
Climate Change Considerations:	Consideration should be taken for an increase in heavy rain and flood events as a result of climate change.	
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives	Action	Evaluation
	Do nothing.	Problem continues.
	Remove roads.	Not feasible, unable to access public areas.
	Implement sandbags during severe storm and flood event.	Short-term solution, does not solve problem.

Action 2024-PiermontV-05. Community Rating System

Action Name:	2024-PiermontV-05. Community Rating System	
Description of the Problem:	The Village is not in the CRS program. The CRS Program would incentivize the Village to implement activities and initiatives that reduce its risk to flood damage, while making residents eligible for flood insurance discounts.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	CAV has been completed and steps have been taken to receive CRS credit. Internal Building department improvements will be conducted; staff training will obtain floodplain managements recordkeeping improvements; increased coordination with village engineer.	
Lead Agency:	PWRC	
Supporting Agencies:	Building Department	
Estimated Cost:	Medium (\$10,000 to \$100,000)	
Potential Funding Sources:	Municipal budget; Grant funding	

Implementation Timeline:	Short Term (<5 years)		
Goals Met:	1, 2, 3, 7		
Benefits:	High (> \$100,000)		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR)	<input type="checkbox"/> Natural Systems Protection (NSP)	<input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Resource Protection (NR)	<input type="checkbox"/> Structural Flood Control Projects (SP)
Impact on Socially Vulnerable Populations:	<input type="checkbox"/> Preventative Measures (PR)		
Impact on Critical Facilities/Lifelines:	<input type="checkbox"/> Property Protection (PP)		
Impact on Capabilities	<input checked="" type="checkbox"/> Public Information (PI)		
Impact on Future Development:	<input type="checkbox"/> Emergency Services (ES)		
Climate Change Considerations:	The CRS program contains actions and elements that include outreach to socially vulnerable populations. Participating as a CRS community will allow flood insurance discounts and premiums for residents.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	Do nothing.		Will not qualify for discounts on flood insurance and FEMA resources.
	Rely on state resources.		Will not be a participating community in CRS.
	Participate as a class 10 community.		Will not be considered a participating community in CRS.

Action 2024-PiermontV-06. Comprehensive Emergency Management Plan Development

Action Name:	2024-PiermontV-06. Comprehensive Emergency Management Plan Development		
Description of the Problem:	The Village does not have a comprehensive emergency management plan that outlines what the Village will do during any of the following events: dam failure, disease outbreak, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, and wildfire.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure	<input checked="" type="checkbox"/> Flood	<input checked="" type="checkbox"/> Landslide
	<input checked="" type="checkbox"/> Disease Outbreak	<input checked="" type="checkbox"/> Severe Storm	<input checked="" type="checkbox"/> Severe Winter Storm
	<input checked="" type="checkbox"/> Drought	<input checked="" type="checkbox"/> Wildfire	
	<input checked="" type="checkbox"/> Earthquake		
	<input checked="" type="checkbox"/> Extreme Temperature		
Description of the Solution:	Waiting on HAZNY review, to fully adopt CEMP.		
Lead Agency:	PWRC		

Supporting Agencies:	N/A		
Estimated Cost:	Medium (\$10,000 to \$100,000)		
Potential Funding Sources:	Municipal Budget		
Implementation Timeline:	Short Term (<5 years)		
Goals Met:	1, 2, 3, 4, 5, 6, 7		
Benefits:	High (> \$100,000)		
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	The CEMP will include emergency management planning that will protect vulnerable populations during emergency events.		
Impact on Critical Facilities/Lifelines:	This action will strengthen and protect critical lifelines to ensure they stay operational especially during an emergency events.		
Impact on Capabilities	This action will improve emergency response capabilities within the Village.		
Impact on Future Development:	N/A		
Climate Change Considerations:	The CEMP incorporates climate change considerations when planning for emergency management for the Village.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	Not adopt the CEMP.		Problem persists.
	Utilize state resources for emergency management.		Costly, not localized data.
	Utilize federal resources for emergency management.		Costly, not localized data.

Action 2024-PiermontV-07. Elevation of Electrical Components at DPW

Action Name:	2024-PiermontV-07. Elevation of Electrical Components at DPW		
Description of the Problem:	Critical facilities located in the floodplain are not only susceptible to flood damage but also create unnecessary complications for the municipality during an emergency event and post-disaster recovery.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	

Description of the Solution:	Determine the 500-year flood elevation at the DPW and elevate the electrical components to protect against damage from flood waters.		
Lead Agency:	DPW		
Supporting Agencies:	N/A		
Estimated Cost:	High (> \$100,000)		
Potential Funding Sources:	Municipal Budget		
Implementation Timeline:	Short Term (<5 years)		
Goals Met:	1, 2, 4, 6		
Benefits:	High (> \$100,000)		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR)	<input type="checkbox"/> Natural Systems Protection (NSP)	
	<input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR)	<input type="checkbox"/> Natural Resource Protection (NR)	
	<input type="checkbox"/> Property Protection (PP)	<input type="checkbox"/> Structural Flood Control Projects (SP)	
	<input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	N/A		
Impact on Critical Facilities/Lifelines:	This action will ensure the functionality and protect against power outages of a critical facility in the Village.		
Impact on Capabilities	Elevation of electrical utilities will ensure that DPW can remain fully operational during a storm event.		
Impact on Future Development:	N/A		
Climate Change Considerations:	N/A		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	Do nothing.		Problem persists.
	Relocated electrical utilities.		Not feasible.
	Design other flood mitigation elements.		Costly, long time span, will need further design and study.

Action 2024-PiermontV-08. Displaced Residents

Action Name:	2024-PiermontV-08. Displaced Residents
Description of the Problem:	Sea level rise flooding of low-lying residential areas could eventually lead to homes becoming inhabitable.

Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	Secure land suitable for relocation of displaced residences outside of ABFE. Explore sale options with school district for SOSCD TZE campus.	
Lead Agency:	PWRC	
Supporting Agencies:	N/A	
Estimated Cost:	High (> \$100,000)	
Potential Funding Sources:	Grant funding; Village	
Implementation Timeline:	Long Term (5+ years)	
Goals Met:	1, 2, 4, 6	
Benefits:	High (> \$100,000)	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	This action protect socially vulnerable populations located in the ABFE.	
Impact on Critical Facilities/Lifelines:	Relocation of a critical facility out of the ABFE allows for full operations during a flood event.	
Impact on Capabilities	N/A	
Impact on Future Development:	N/A	
Climate Change Considerations:	Climate change will exacerbate flood scenarios and this action will help to mitigate these impacts.	
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives	Action	Evaluation
	Do nothing.	Problems continue.
	Elevate all structures.	Costly, long timeline.
	Implement flood mitigation measures.	Costly, short term solution.

Action 2024-PiermontV-09. Dock Structural Integrity

Action Name:	2024-PiermontV-09. Dock Structural Integrity		
Description of the Problem:	Diminished capacity and structural integrity of T Dock limits expansion of commercial and recreational river access and creates potential public safety issues. Future sea level rise and storm events threaten to damage current dock beyond repair.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	Secure funding for design and construction of replacement pier dock to address structural integrity issues identified in 2018 blue shore engineering assessment, and plan for future sea level rise and storm surge events.		
Lead Agency:	Village Board		
Supporting Agencies:	N/A		
Estimated Cost:	High (> \$100,000)		
Potential Funding Sources:	multiple, federal, state, private		
Implementation Timeline:	Long Term (5+ years)		
Goals Met:	1, 2, 4, 6		
Benefits:	High (> \$100,000)		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	N/A		
Impact on Critical Facilities/Lifelines:	This action protects a critical facility which promotes expansion of commercial and recreational river access.		
Impact on Capabilities	N/A		
Impact on Future Development:	N/A		
Climate Change Considerations:	This action takes into account climate considerations such as sea level rise, when designing a new dock structure.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low

Alternatives	Action	Evaluation
	Do nothing.	Problem continues.
	Implement upgrades.	Short term solution.
	Remove T Dock	Not an option.

Action 2024-PiermontV-10. Elevate Roadways

Action Name:	2024-PiermontV-10. Elevate Roadways	
Description of the Problem:	Waterfront Flooding along Hudson and Sparkill increasing in frequency.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	Elevate Roadways in key locations: Ferdon, South Piermont Ave, Paradise Ave, and Piermont Ave near marinas	
Lead Agency:	Village	
Supporting Agencies:	County, State, Federal	
Estimated Cost:	High (> \$100,000)	
Potential Funding Sources:	CRRRA bond, DOT, County	
Implementation Timeline:	Short Term (<5 years)	
Goals Met:	1, 2, 3, 5, 7	
Benefits:	High (> \$100,000)	
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Elevating the road will provide a safe path of ingress and egress for residents of flood prone areas.	
Impact on Critical Facilities/Lifelines:	Maintain ability to evacuate and improve emergency response capabilities.	
Impact on Capabilities	Protection of life, maintain ability to provide emergency services.	
Impact on Future Development:	Ensuring safe travel encourages businesses and residents to remain in or move to the area.	
Climate Change Considerations:	NOAA estimates 36 events in 2025 that will flood Ferdon, South Piermont Ave, Paradise Ave, and Piermont Ave near marinas	

Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action.		Problem continues.
	Remove flood prone roadway		Loss of access to neighborhoods, increased emergency risk
	Buyout properties that exist along flood prone roadways		Costly, loss of large portion of community

Action 2024-PiermontV-11. Drainage and Culvert Upgrades

Action Name:	2024-PiermontV-11. Drainage and Culvert Upgrades	
Description of the Problem:	52.5 percent of Piermont is in the 100- or 500-year floodplain, and existing drainage and culverts cannot handle existing stormwater amounts.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	Right sizing drainage and culverts to handle 3inches/hour rainfall rates and 8+ inches total accumulation in a 48-hour period.	
Lead Agency:	Village	
Supporting Agencies:	DOT, County	
Estimated Cost:	High (> \$100,000)	
Potential Funding Sources:	BRIC, State CRRRA bond	
Implementation Timeline:	Long Term (5+ years)	
Goals Met:	1, 2, 3, 5, 7	
Benefits:	Protection of life and property, infrastructure.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Areas that were previously vulnerable to frequency or severe flooding events will be less likely to be impacted by flooding events.	
Impact on Critical Facilities/Lifelines:	Access to health and medical facilities will be maintained, both for healthcare workers and the population who requires treatment for injuries and illness.	
Impact on Capabilities	Improved stormwater management capabilities. Identifying the culverts that are at greatest risk of damage or failure can allow for resource staging to take place where the need is greatest ahead of a flood event.	

Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.		
Climate Change Considerations:	Increasing intensity, duration, and frequency of heavy rainfall events due to climate change. This action upsizes culvert sizes to meet changing stormwater needs as the result of climate change.		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action.		Problem continues.
	Elevate roadway.		May not solve this particular flooding concern, Costly.
	Relocated roadway		Not possible.

Action 2024-PiermontV-12. Critical Facilities in the Floodplain

Action Name:	2024- PiermontV-12. Critical Facilities in the Floodplain	
Description of the Problem:	There are two dams (Boss Pond Dam and Piermont Paper Company Dam), a post office (Piermont Post Office), and two marinas (T and R Marina, Inc. and Paradise Boats) in the floodplain in the Village. The Village does not have jurisdiction of all of these structures to mitigate.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Village will notify the private owners regarding these critical facilities' flood vulnerability identified during the Rockland County HMP update and NYS' requirement to protect to the 500-year flood or worst-case scenario. The Village will provide the owners information regarding grant options for funding to implement their mitigation. The private owners will need to determine the most cost effective and feasible mitigation action for these facilities. The Village will determine the feasibility of potential mitigation projects for the facilities within their jurisdiction.	
Lead Agency:	Village, Property Owners	
Supporting Agencies:	Building Department	
Estimated Cost:	Low (< \$10,000)	
Potential Funding Sources:	FEMA HMA, FMA, BRIC	
Implementation Timeline:	Short-term (< 5 years)	
Goals Met:	1, 2	
Benefits:	High (> \$100,000)	

Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	N/A	
Impact on Critical Facilities/Lifelines:	This project aims to ensure the accessibility of roadways during flooding events and ensures access to emergency routes and critical facilities.	
Impact on Capabilities:	N/A	
Impact on Future Development:	This project can help mitigate potential damage along any affected roadways.	
Climate Change Considerations:	N/A	
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives Action Name:	Action	Alternatives
	No action	Problem continues
	Village completes mitigation actions in inundation area	Does not eliminate vulnerability or risk

SECTION 9. JURISDICTIONAL ANNEXES

9.16 VILLAGE OF POMONA

This jurisdictional annex to the Rockland County Hazard Mitigation Plan (HMP) provides information to assist public and private sectors in the Village of Pomona with reducing losses from future hazard events. This annex is not guidance of what to do when a disaster occurs; its focus is on actions that can be implemented prior to a disaster to reduce or eliminate damage to property and people. The annex presents a general overview of the Village of Pomona, describes who participated in the planning process, assesses the Village’s risk, vulnerability, and capabilities, and outlines a strategy for achieving a more resilient community.

9.16.1 Hazard Mitigation Planning Team

The Village of Pomona identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Village departments. The Clerk represented the community on the Rockland County HMP Planning Partnership and Steering Committee and supported the local planning process requirements by securing input from persons with specific knowledge to enhance the plan. All departments were asked to contribute to the annex development through reviewing and contributing to the capability assessment, reporting on the status of previously identified actions, and participating in action identification and prioritization.

Table 9.16-1 summarizes Village officials who participated in the development of the annex and in what capacity. Additional documentation of the Village’s planning activities through Planning Partnership meetings is included in Volume I.

Table 9.16-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Jenna Antoine, Village Clerk Address: 100 Ladentown Road, Pomona, NY 10970 Phone Number: 845-354-0545 Email: Clerk@pomonavillage.com	Name/Title: Ilan Fuchs, Mayor Address: 100 Ladentown Road, Pomona, NY 10970 Phone Number: 845-354-0545 Email: mayor@pomonavillage.com
National Flood Insurance Program Floodplain Administrator	
Name/Title: P.J. Corless, Village Engineer Address: 100 Ladentown Road, Pomona, NY 10970 Phone Number: 845-354-0545 Email: joe@corless.com	
Additional Contributors	
Name/Title: Haris Aljovic, Village Engineer, Spence Engineering Method of Participation: Attended Planning Partnership Kickoff, Risk Assessment, and Mitigation Action meetings; provided feedback and information for annexes	

9.16.2 Municipal Profile

The Village of Pomona lies partly in the town of Ramapo and partly in the town of Haverstraw. It is located north of New Hempstead village, east of Harriman State Park, north of the hamlet of Monsey, and west of Mount Ivy

hamlet. The village has a total area of 2.4 square miles, all of which is land. The northernmost 1.4 square miles of the village is in the town of Haverstraw, and the remaining 1.0 square miles is in the town of Ramapo.

Pomona has three Village parks, and is near many other parks, including Harriman State Park. Harriman State Park is the second-largest park in the New York State Park System, with 31 lakes and reservoirs, 200 miles of hiking trails, miles of streams and scenic roads, and scores of wildlife species, vistas, and vantage points.

Research has shown that some populations are at greater risk from hazard events because of decreased resources or physical abilities. These populations can be more susceptible to hazard events based on a number of factors including their physical and financial ability to react or respond during a hazard, and the location and construction quality of their housing. Data from the 2017-2021 American Community Survey indicate that 7.4 percent of the population is five years of age or younger, 18.5 percent is 65 years of age or older, 3.5 percent is non-English speaking, 3.4 percent is below the poverty threshold, and 8.9 percent is considered disabled.

9.16.3 Jurisdictional Capability Assessment and Integration

The Village of Pomona performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Volume I describes the components included in the capability assessment and their significance for hazard mitigation planning. The jurisdictional assessment for this annex includes analyses of the following:

- Planning and regulatory capabilities
- Development and permitting capabilities
- Administrative and technical capabilities
- Fiscal capabilities
- Education and outreach capabilities
- Classification under various community mitigation programs
- Adaptive capacity to withstand hazard events

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into day-to-day local government operations. As part of the hazard mitigation analysis, planning and /policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress toward plan integration. Development of an updated mitigation strategy provided an opportunity for the Village of Pomona to identify opportunities for integration of mitigation concepts that can be incorporated into municipal procedures.

Planning, Legal, and Regulatory Capability and Integration

Table 9.16-2 summarizes the regulatory tools that are available to Pomona.

Table 9.16-2. Planning, Legal, and Regulatory Capability and Integration

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Codes, Ordinances, & Regulations				
Building Code	Yes	NYS Building Code & Chapter 140, 176, 196	State and Local	Village Building Inspector
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The NYS Building Code is intended to establish provisions that adequately protect public health, safety and welfare through the minimum requirements for building systems using prescriptive and performance-related provisions. It is founded on broad-based principles that make possible the use of new materials and new building designs. The 2020 edition is an update to the 2018 edition published by the ICC. It is part of the Uniform Fire Prevention and Building Code.				
Zoning/Land Use Code	Yes	Chapter 30 – Zoning, 1988	Local	Village Building Inspector
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Zoning Ordinance implements the goals and objectives of the Comprehensive Plan.				
Subdivision Code	Yes	Chapter 118 – Subdivision of Land, 1988	Local	Village Building Inspector
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Subdivisions Ordinance requires measures and reviews to prevent building that would impair flood hazard areas.				
Site Plan Code	Yes	Chapter 119 - Site Development Plan Review	Local	Village Building Inspector
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Site Plan Ordinance requires measures and reviews to prevent building that would impair flood hazard areas.				
Stormwater Management Code	Yes	Chapter 114, Article II – Erosion and Sediment Control, 2007	Local	Village Stormwater Management Officer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The purpose of chapter 114 is to establish minimum stormwater management requirements and controls to protect and safeguard the general health, safety, and welfare of the public within the Village.				
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Real Estate Disclosure	Yes	New York State (NYS) mandate, Property Condition Disclosure Act, NY Code – Article 14 §460-467	State and Local	NYS Department of State
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> In addition to facing potential liability for failing to disclose under the exceptions to “caveat emptor,” a home seller must make certain disclosures under the law or pay a credit of \$500 to the buyer at closing. While the PCDA requires a seller to complete a standardized disclosure statement and deliver it to the buyer before the buyer signs the final purchase contract, in practice, most home sellers in New York opt not to complete the statement and instead pay the credit.				
Growth Management	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Environmental Protection Ordinance(s)	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Flood Damage Prevention Ordinance	Yes	Chapter 79 – Flood Damage Prevention, 2014	Federal, State, Local	Village Building Inspector
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The FDPO promotes the public health, safety and general welfare and to minimize public and private losses due to flood conditions in specific areas. The Village requires that all new construction or substantial improvements of structures in the SFHA must have the lowest floor elevated to or above the base flood elevation. This meetings the State’s mandated BFE +2 feet.				
Wellhead Protection	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Emergency Management Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Climate Change Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other	-	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Planning Documents				
General/Comprehensive Plan	Yes	Village Comprehensive Plan	Local	Village Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The comprehensive plan is prepared by the Village Planning Board and indicates the general locations recommended for various functional classes of public works, places and structures and the general physical development of the Village.				
Capital Improvement Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Disaster Debris Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Floodplain Management or Watershed Plan	Yes	Flood Mitigation and Resilience Report for Minisceongo Creek (April 2022)	State and County	NYSDEC, Rockland County Soil and Water Conservation
<p><i>How has or will this be integrated with the HMP and how does this reduce risk?</i> This report was conducted as part of the Resilient New York Program, an initiative of the New York State Department of Environmental Conservation. As part of this report, flood-prone High-Risk Areas (HRAs), within the Minisceongo Creek watershed are identified, and an analysis of flood mitigation considerations within each HRA is undertaken. Flood mitigation scenarios such as floodplain enhancement and channel restoration, dam modifications, road closures, and replacement of undersized bridges and culverts are recommended where appropriate.</p>				
Stormwater Management Plan	Yes	Stormwater Pollution Prevention Plan	Local	Village Planning Board and
<p><i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The SWPP includes information on stormwater pollution prevention projects planned for the Village, descriptions of soils present, a construction phasing plan, and pollution prevention measures. This plan helps reduce stormwater pollution within the village during severe flood events.</p>				
Open Space Plan	No	-	-	-
<p><i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A</p>				
Urban Water Management Plan	No	-	-	-
<p><i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A</p>				
Habitat Conservation Plan	No	-	-	-
<p><i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A</p>				
Economic Development Plan	No	-	-	-
<p><i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A</p>				
Community Wildfire Protection Plan	No	-	-	-
<p><i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A</p>				
Community Forest Management Plan	No	-	-	-
<p><i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A</p>				
Transportation Plan	No	-	-	-
<p><i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A</p>				
Agriculture Plan	No	-	-	-
<p><i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A</p>				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Climate Action/ Resiliency/Sustainability Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Tourism Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Business/ Downtown Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Response/Recovery Planning				
Comprehensive Emergency Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Continuity of Operations Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Substantial Damage Response Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Threat & Hazard Identification & Risk Assessment	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Post-Disaster Recovery Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Public Health Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

Development and Permitting Capability

Table 9.16-3 summarizes the capabilities of Pomona to oversee and track development.

Table 9.16-3. Development and Permitting Capability

Indicate if your jurisdiction implements the following	Yes/No	Comment:
Do you issue development permits? <ul style="list-style-type: none"> If you issue development permits, what department is responsible? If you do not issue development permits, what is your process for tracking new development? 	Yes	The Building Department is responsible for tracking new development permits.
Are permits tracked by hazard area? (For example, floodplain development permits.)	No	-
Do you have a buildable land inventory? <ul style="list-style-type: none"> If you have a buildable land inventory, please describe 	No	-
Describe the level of build-out in your jurisdiction.	N/A	-

Administrative and Technical Capability

Table 9.16-4 summarizes potential staff and personnel resources available to Pomona and their current responsibilities that contribute to hazard mitigation.

Table 9.16-4. Administrative and Technical Capabilities

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
<i>Administrative Capability</i>		
Planning Board	Yes	The Village of Pomona Planning Board consists of five members and one alternate and meets once a month. The Planning Board reviews and grants approvals for site plans and subdivisions. They also make recommendations to the Zoning Board of Appeals and Town Board on various zoning and planning matters.
Zoning Board of Adjustment	Yes	The Village of Pomona Zoning Board of Appeals consists of five members and one alternate and meets once a month, as needed. The Zoning Board considers appeals for variances from the zoning ordinance, appeals of the Building Inspector, special permit applications and requests for zoning interpretations.
Planning Department	No	-
Mitigation Planning Committee	No	-
Environmental Board/Commission	No	-
Open Space Board/Committee	No	-
Economic Development Commission/Committee	No	-
Public Works/Highway Department	No	-

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
Construction/Building/Code Enforcement Department	Yes	The Building Department assists with site plan reviews, permitting, inspections, and administration of the building, zoning, subdivision, and flood damage prevention codes/ordinances. This department includes the Village Engineer, who serves as the floodplain administrator, and is responsible for many engineering services in connection with the functions of the Village. Some of the tasks include the design of storm drainage and sanitary sewers and the performance of routine inspections of projects. The department reviews projects that are being constructed within the Village.
Emergency Management/Public Safety Department	No	-
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	No	-
Mutual aid agreements	Yes	Snow removal and road repairs are budgeted through contractual agreements with the towns of Ramapo and Haverstraw
Human Resources Manual	No	-
Other: Parks and Recreation Commission	Yes	The Parks and Recreation Commission shall provide, conduct, and supervise public playgrounds, playfields, indoor recreation centers and other recreation areas and facilities owned or controlled by the Village. It shall have the power to conduct any form of athletic, play or cultural activity that will employ the leisure time of the people in a constructive and wholesome manner. It may conduct such activities on properties under its own control, on public properties with the consent of the authorities thereof and on private properties with the consent of the owners. It shall also promulgate rules and regulations concerning recreation activity and the operation and control of the parks of the Village.
<i>Technical/Staffing Capability</i>		
Planners or engineers with knowledge of land development and land management practices	Yes	Village Engineer (Contract)
Engineers or professionals trained in building or infrastructure construction practices	Yes	Village Engineer (Contract)
Planners or engineers with an understanding of natural hazards	Yes	Village Planner and Engineer (Contract)
Staff with expertise or training in benefit/cost analysis	Yes	Village Planner and Engineer (Contract)
Professionals trained in conducting damage assessments	Yes	
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	Yes	Village Planner and Engineer (Contract)
Environmental scientist familiar with natural hazards	No	-
Surveyor(s)	Yes	Contract
Emergency Manager	No	-
Grant writer(s)	No	-
Resilience Officer	No	
Other	No	-

Fiscal Capability

Table 9.16-5 summarizes financial resources available to Pomona.

Table 9.16-5. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use? (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	Yes
Capital improvements project funding	No
Authority to levy taxes for specific purposes	Yes
User fees for water, sewer, gas or electric service	No
Impact fees for homebuyers or developers of new development/homes	Yes, Code Revision
Stormwater utility fee	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	Yes
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	No
Other federal or state Funding Programs	No
Open Space Acquisition funding programs	No
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	Consolidated Local Street and Highway Improvement Program (CHIPs), NYSDOT

Education and Outreach Capability

Table 9.16-6 summarizes the education and outreach resources available to Pomona.

Table 9.16-6. Education and Outreach Capabilities

Outreach Resources	Available? (Yes/No)	Comment:
Public information officer or communications office	No	-
Personnel skilled or trained in website development	No	-
Hazard mitigation information available on your website	Yes	The Village maintains a website has links to the municipal newsletter, local laws and documents, the annual budget, county websites, and emergency services. The Village also contracts with Cornell Cooperative Extension to broaden the scope of public outreach informing citizens on natural hazards.
Social media for hazard mitigation education and outreach	Yes	The Village has a Facebook page to share hazard mitigation education and outreach.
Citizen boards or commissions that address issues related to hazard mitigation	No	-
Warning systems for hazard events	Yes	The County utilizes NY-Alert and CodeRed (the backup to NY-Alert) for emergency notifications (all Towns and Villages have access to it).
Natural disaster/safety programs in place for schools	No	-
Organizations that conduct outreach to socially vulnerable populations and underserved populations	No	-

Outreach Resources	Available? (Yes/No)	Comment:
Public outreach mechanisms / programs to inform citizens on natural hazards, risk, and ways to protect themselves during such events	Yes	The Village maintains a website has links to the municipal newsletter, local laws and documents, the annual budget, county websites, and emergency services. The Village also contracts with Cornell Cooperative Extension to broaden the scope of public outreach informing citizens on natural hazards.

Community Classifications

Table 9.16-7 summarizes classifications for community programs available to Pomona.

Table 9.16-7. Community Classifications

Program	Participating? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	No	-	-
New York State Department of Environmental Conservation (NYSDEC) Climate Smart Community	No	-	-
National Weather Service Storm Ready Certification	No	-	-
Firewise Communities classification	No	-	-
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable

— = Unavailable

Adaptive Capacity

Adaptive capacity is defined as “the ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or respond to consequences” (IPCC, 2022). Each jurisdiction has a unique combination of capabilities to adjust to, protect from, and withstand a future hazard event, future conditions, and changing risk. Table 9.16-8 summarizes the adaptive capacity for each identified hazard of concern and the Village’s capability to address related actions using the following classifications:

- Strong: Capacity exists and is in use.
- Moderate: Capacity might exist; but is not used or could use some improvement.
- Weak: Capacity does not exist or could use substantial improvement.

Table 9.16-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Disease Outbreak	Moderate
Drought	Moderate
Earthquake	Moderate
Extreme Temperature	Moderate
Flood	Moderate
Landslide	Moderate

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

9.16.4 National Flood Insurance Program Compliance

This section provides specific information on the management and regulation of the regulatory floodplain, including current and future compliance with the National Flood Insurance Program (NFIP). The floodplain administrator listed in Table 9.16-1 is responsible for maintaining this information.

NFIP Summary

Table 9.16-9 summarizes the NFIP statistics for Pomona.

Table 9.16-9. Village of Pomona NFIP Summary of Policy and Claim Statistics

# Policies	14
# Claims (Losses)	29
Total Loss Payments	\$97,455
# Repetitive Loss Properties (NFIP definition)	0
# Repetitive Loss Properties (FMA definition)	3
# Severe Repetitive Loss Properties	0
# Policies Within the 1 percent Annual Chance Flood Boundary	0

NFIP Definition of Repetitive Loss: The NFIP defines a repetitive loss property as any insurable building for which two or more claims of more than \$1,000 were paid by the NFIP within any rolling 10-year period since 1978.

FMA Definition of Repetitive Loss: FEMA’s Flood Mitigation Assistance (FMA) program defines a repetitive loss property as any insurable building that has incurred flood-related damage on two occasions, in which the cost of the repair, on average, equaled or exceeded 25 percent of the market value of the structure at the time of each such flood event.

Definition of Severe Repetitive Loss: A residential property covered under an NFIP flood insurance policy and: (a) That has at least four NFIP claim payments over \$5,000 each, and the cumulative amount of such claims payments exceeds \$20,000; or (b) For which at least two separate claims payments have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building. At least two of the claims must have occurred within any 10-year period, more than 10 days apart.

Source: FEMA, December 2023

Note: RL count may include properties also identified as SRL.

Flood Vulnerability Summary

Table 9.16-10 provides a summary of the NFIP program in Pomona.

Table 9.16-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	Unknown, at this time.
Do you maintain a list of properties that have been damaged by flooding?	N/A
Do you maintain a list of property owners interested in flood mitigation?	No, not at this time.

NFIP Topic	Comments
How many homeowners and/or business owners are interested in mitigation (elevation or acquisition)?	N/A
Are any RiskMAP projects currently underway in your jurisdiction? <ul style="list-style-type: none"> • If so, state what projects are underway. 	No RiskMAP projects are underway at this time.
How do you make Substantial Damage determinations?	The Village Inspections and Building and Zoning Ordinance and Code Enforcement make substantial damage determinations.
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	Unknown, at this time.
How many properties have been mitigated (elevation or acquisition) in your jurisdiction? <ul style="list-style-type: none"> • If there are mitigation properties, how were the projects funded? 	Unknown, at this time.
Do your flood hazard maps adequately address the flood risk within your jurisdiction? <ul style="list-style-type: none"> • If not, state why. 	Yes, the flood hazard maps address flood risk for the Village.
NFIP Compliance	
What local department is responsible for floodplain management?	The Village Engineer.
Are any certified floodplain managers on staff in your jurisdiction?	Yes, the Village has certified floodplain managers on staff.
Do you have access to resources to determine possible future flooding conditions from climate change?	Yes, the Village has access to these resources.
Does your floodplain management staff need any assistance or training to support its floodplain management program? <ul style="list-style-type: none"> • If so, what type of assistance/training is needed? 	None, at this time.
Provide an explanation of NFIP administration services you provide (e.g., permit review, GIS, education/outreach, inspections, engineering capability)	The Village provides Permit Review, Inspections and Engineering
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	The Village has consultants who determine substantial improvement determinations.
What are the barriers to running an effective NFIP program in the community, if any?	The Village Engineer determines any barriers or challenges.
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? <ul style="list-style-type: none"> • If so, state the violations. 	No, not at this time.
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	Based on NYS DEC data, the Village has never had a CAV/CAC.
What is the local law number or municipal code of your flood damage prevention ordinance?	Chapter 79 Flood Damage Prevention, 2014.
What is the date that your flood damage prevention ordinance was last amended?	2014
Does your floodplain management program meet or exceed minimum requirements? <ul style="list-style-type: none"> • If exceeds, in what ways? 	The Village floodplain management program meets the minimum requirements.
Are there other local ordinances, plans or programs (e.g., site plan review) that support floodplain management and meeting the NFIP requirements? For instance, does the planning board or zoning board consider efforts to reduce flood risk when reviewing variances such as height restrictions?	Yes.

NFIP Topic	Comments
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	The Village has not considered joining but may attend a CRS Seminar if invited locally

9.16.5 Growth/Development Trends

Understanding how past, current, and projected development patterns have or are likely to increase or decrease risk in hazard areas is a key component to appreciating a jurisdiction’s overall risk to its hazards of concern. Recent and expected future development trends, including major residential/commercial development and major infrastructure development, are summarized in Table 9.16-11 through Table 9.16-13.

Table 9.16-11. Number of Building Permits for New Construction Issued Since the Previous HMP

	New Construction Permits Issued			Total
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	
2019				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2020				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2021				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2022				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2023				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0

SFHA = Special Flood Hazard Area (1 percent flood event)

Table 9.16-12. Recent Major Development and Infrastructure from 2018 to Present

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
No major development and infrastructure reported.					

* Only location-specific hazard zones or vulnerabilities identified.

Table 9.16-13. Known or Anticipated Major Development and Infrastructure in the Next Five Years

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
No major development or infrastructure anticipated.					

* Only location-specific hazard zones or vulnerabilities identified.

9.16.6 Jurisdictional Risk Assessment

The hazard profiles in Volume I provide detailed information regarding each planning partner’s vulnerability to the identified hazards, including summaries of the Village of Pomona risk assessment results and data used to determine the hazard ranking. Key local risk assessment information is presented below.

Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Village are shown in Figure 9.16-1 and Figure 9.16-2. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps are provided only for hazards that can be identified clearly using mapping techniques and technologies and for which Pomona has significant exposure. The maps show the location of potential new development, where available.

Figure 9.16-1. Village of Pomona Flood and Dam Inundation Hazard Area Extent and Location

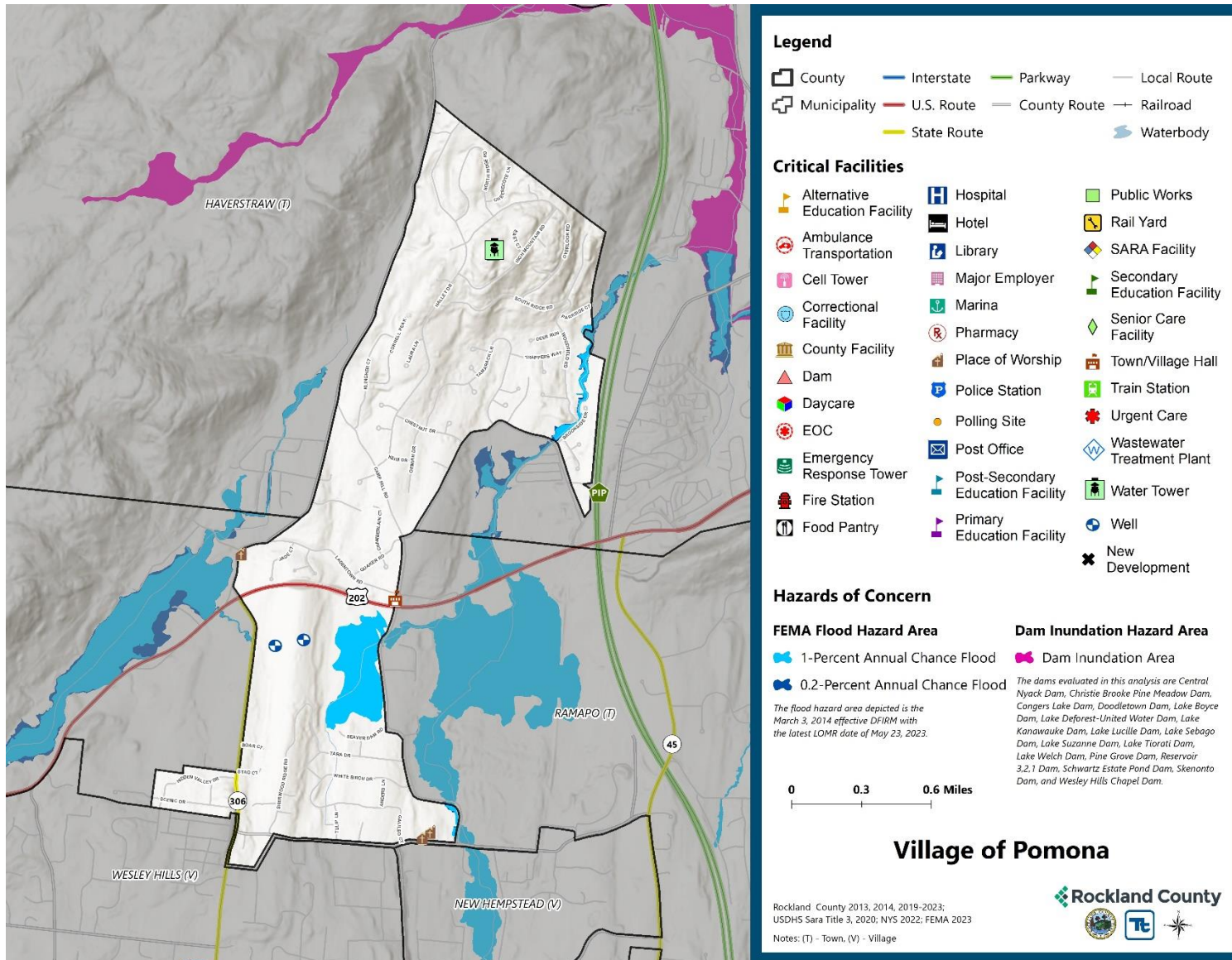
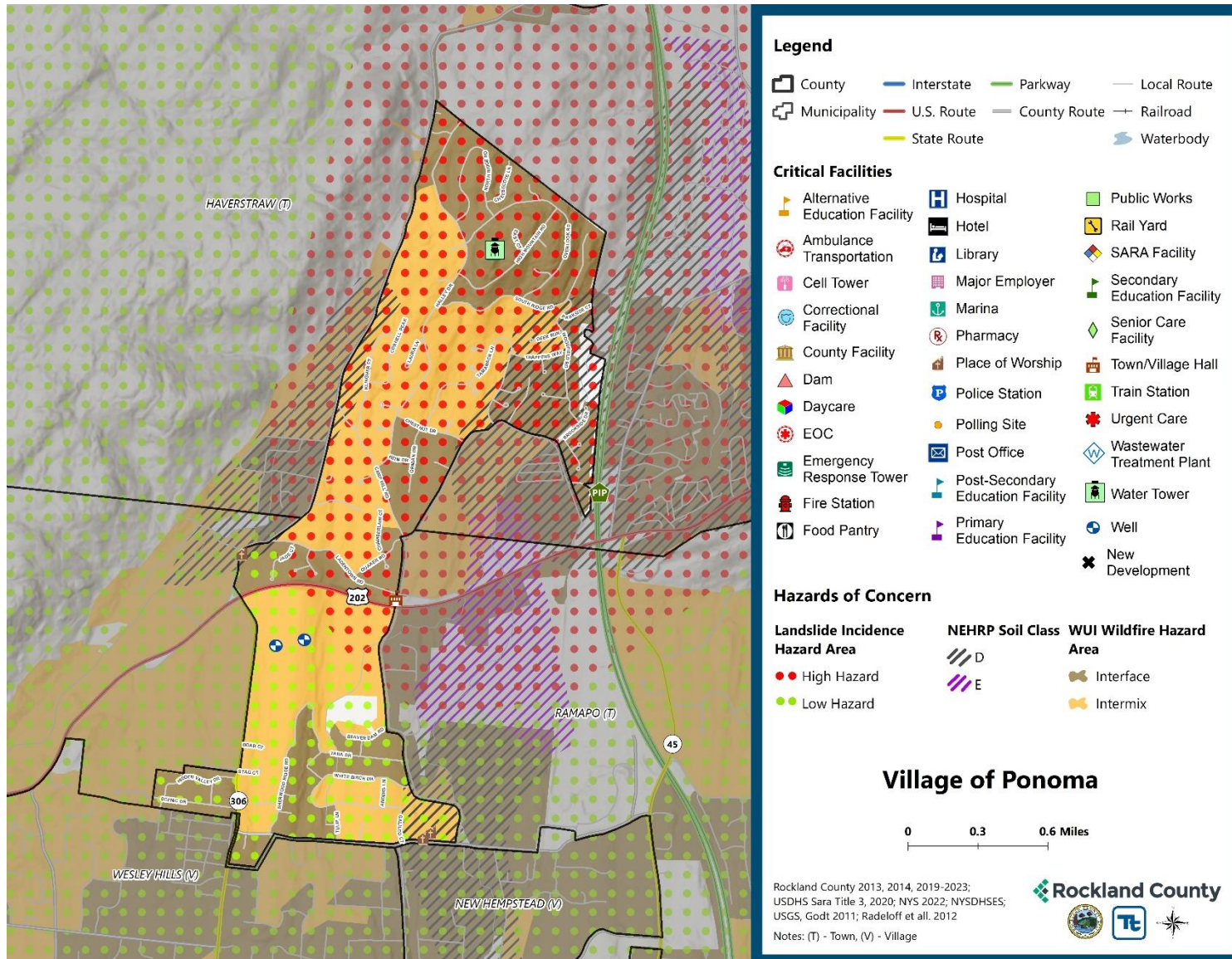


Figure 9.16-2. Village of Pomona Landslide, Earthquake, and Wildfire Hazard Area Extent and Location



Hazard Event History

The history of natural and non-natural hazard events in the Village of Pomona is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 9.16-14 provides details on loss and damage in the Village during hazard events since the last hazard mitigation plan update.

Table 9.16-14. Hazard Event History in the Village of Pomona

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Summary of Damage and Losses in the Village
Jan 20, 2020 - May 11, 2023	New York Covid-19 (3434-EM-NY, 4480-DR-NY)	Yes	The Covid-19 pandemic resulted in nationwide shutdowns, social distancing and masking requirements, and immunization efforts. Since the start of the pandemic, roughly 950 deaths have been reported in Rockland County. The federal Public Health Emergency expired in May 2023 but illness continues to occur as the virus shifts to becoming endemic.	The Village followed protocol for safety during the Covid-19 pandemic and issued safe distancing. Impacts were seen to the Village’s community and hospitals.
August 4, 2020	New York Tropical Storm Isaias (4567-DR-NY)	Yes	The center of Isaias passed about 65 miles west of New York City at 3 pm on August 4, 2020. Tropical storm force winds extended well east of the center of circulation. In addition, 1 to 3 inches of rainfall, highest west, were recorded across the county. These types of winds and rainfall across the area resulted in numerous trees and tree limbs being downed, power outages, damages to homes and automobiles, and disruption to transit.	Small impacts and damages were experienced by the Village.
August 21-24, 2021	New York Hurricane Henri (3565-EM-NY)	Yes	Rainfall from Tropical Storm Henri resulted in widespread flash flooding across southeastern New York, particularly portions of the Lower Hudson Valley. Rainfall totals generally ranged from 2-5 inches, with this rain coming in addition to the 2-5 inches that fell during the predecessor rainfall event the night before.	Small impacts and damages were experienced by the Village.
September 1-3, 2021	New York Remnants of Hurricane Ida (3572-EM-NY, 4615-DR-NY)	Yes	Extremely heavy rainfall associated with the remnants of Hurricane Ida overspread southeast New York during the evening of September 1 and continued through the early morning hours of September 2. Rainfall totals ranged from 5-8 inches across much of the region, with much of that rain falling in just a few hours. This resulted in widespread catastrophic flash flooding.	Small impacts and damages were experienced by the Village.

EM = Emergency Declaration (FEMA)
 FEMA = Federal Emergency Management Agency
 DR = Major Disaster Declaration (FEMA)
 N/A = Not applicable

Hazard Ranking and Vulnerabilities

The hazard profiles in Volume I have detailed information regarding each planning partner’s vulnerability to the identified hazards. The following summarizes presents key risk assessment results for the Village of Pomona.

Hazard Ranking

The participating jurisdictions have differing degrees of vulnerability to the hazards of concern, so each jurisdiction ranked its own degree of risk to each hazard. The community-specific hazard ranking is based on problems and impacts identified by the risk assessment presented in Volume I. The ranking process involves an assessment of the likelihood of occurrence for each hazard; the potential impacts of the hazard on people, property, and the economy; community capabilities to address the hazard; and changing future climate conditions. Pomona reviewed the County hazard ranking and individual results to assess the relative risk of the hazards of concern to the community. During the review of the hazard ranking, the Village indicated the following were accurate for hazards of concern seen within the community.

Table 9.16-15 shows Pomona’s final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 9.16-15. Hazard Ranking

Hazard	Rank
Dam/Levee	Low
Disease Outbreak	Medium
Drought	Medium
Earthquake	Low
Extreme Temperature	Medium
Flood	Medium
Landslide	High
Severe Weather	High
Severe Winter Weather	High
Wildfire	Medium

Note: The scale is based on the hazard rankings established in Volume I, modified as appropriate based on review by the jurisdiction

Critical Facilities

Table 9.16-16 identifies critical facilities in the community located in the 1 percent and 0.2 percent annual chance floodplains.

Table 9.16-16. Critical Facilities Flood Vulnerability

Name	Type	Exposure		Addressed by Proposed Action	Already Protected to 0.2 percent Flood Level (describe protections)
		1 percent Event	0.2 percent Event		
The Village of Pomona has no critical facilities located within the 1- or 0.2-percent Annual Chance Flood Hazard Area.					

Source: Rockland County 2023, FEMA

In addition to critical facilities that are exposed to flooding, there are no High Hazard Potential dams or dam inundation areas located in the Village.

Identified Issues

After review of the Village of Pomona’s hazard event history, hazard rankings, hazard location, and current capabilities, the Village of Pomona identified the following vulnerabilities within their community:

- The drainage system on Ormian Drive-Quaker Road is too small, elevating the risk for flooding.
- There are several repetitive loss properties within the Village.
- Road systems within the Village flood regularly.
- There is a need for institutional understanding of hazard mitigation.
- The current comprehensive plan does not thoroughly incorporate natural disaster mitigation considerations.

9.16.7 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and prioritizes actions to address over the next five years.

Past Mitigation Initiative Status

Table 9.16-17 indicates progress on the Village’s mitigation strategy identified in the 2019 HMP. Actions that are still recommended but not completed or that are in progress are carried forward and combined with new actions as part of the mitigation strategy for this plan update. Previous actions that are now ongoing programs and capabilities are indicated as such and are presented in the capability assessment earlier in this annex.

Additional Mitigation Efforts

The Village did not identify mitigation efforts completed since the last HMP in addition to the mitigation initiatives completed in.

Table 9.16-17. Status of Previous Mitigation Actions

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
VP-1	Comprehensive Plan Update	All Hazards	CPG member; Village Trustee	The current comprehensive plan does not thoroughly incorporate natural disaster mitigation considerations. Ensure that local comprehensive plans incorporate natural disaster mitigation techniques through a courtesy review or draft plans by the County Planning Department.	1. No Progress 2. The village has not developed a comprehensive plan. It is their hope to begin the process of developing a Comprehensive Plan is year, (2024).	1. Include 2. Develop a Comprehensive Plan which incorporates natural disaster mitigation techniques for the Village. 3. N/A
VP-2	Public Workshops	All Hazards	CPG member; Village Trustee	Increase institutional understanding and programmatic consideration of hazard mitigation. Hold periodic workshops regarding zoning and planning issues that arise regarding natural hazards and hazard mitigation.	1. No Progress 2. The Village hopes to begin these workshops in conjunction for the development of the Comprehensive Plan.	1. Include 2. Hold periodic workshops regarding zoning and planning issues that arise regarding natural hazards and hazard mitigation during Comprehensive Plan development. 3. N/A
VP-3	Maintain List of Repetitive Flood Property	Flood, Severe Storm	Floodplain manager, Building Department	Identify and document repetitively flooded properties. Work with owners to explore mitigation opportunities for repetitively flooded properties, and if appropriate and feasible, carry out acquisition, relocation, elevation and	1. Ongoing Capability 2. The Village was able to secure a grant with Assemblymen Zebrowski to address severe flooding issues in Burgess Meredith Park in the vicinity of Woodfield Lane and the Palisades Interstate Parkway. The runoff from the Parkway routinely floods the community park. Village	1. Include 2. The Village will continue to identify, and document flooded properties as needed and work with owners to explore possible mitigation opportunities for repetitively flooded properties. 3. N/A

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
				floodproofing measures to protect these properties.	will continue to identify, and document flooded properties as needed.	
VP-4	Flood Prone Road Mitigation Measures	Flood, Severe Storm	County Highway	<p>Flood prone roads can inhibit emergency response and evacuation during a flood.</p> <p>Develop specific mitigation solutions for flood prone road systems (roads, bridges, intersections, drainage, etc.) under the leadership of County Highway, including but not limited to: Camp Hill Road and Southerly area.</p>	<p>1. Completed</p> <p>2. Flood prone flooding on the north end of Camphill Road was mitigated by the Town of Ramapo Highway Department. Flooding on the south end of Camphill Road is from individual property owners and has not been addressed. The Village has an Inter-Municipal Agreement with the Town of Ramapo Highway Department for the maintenance of village roadway.</p>	<p>1. Discontinue</p> <p>2. N/A</p> <p>3. Completed</p>
VP-5	Ormian Drive-Quaker Road Drainage Improvements	Flood, Severe Storm	Village DPW	<p>The drainage system on Ormian Drive-Quaker Road is too small.</p> <p>Improve and maintain road drainage systems on Ormian Drive-Quaker Road.</p>	<p>1. No progress</p> <p>2. N/A</p>	<p>1. Discontinue</p> <p>2. N/A</p> <p>3. There is currently no drainage improvements needed at the intersection of Ormian Drive and Quaker Road.</p>

Proposed Hazard Mitigation Initiatives for the HMP Update

Pomona participated in the mitigation strategy workshop for this HMP to identify appropriate actions to include in a local hazard mitigation strategy. Its comprehensive consideration of all possible activities to address hazards of concern included review of the following FEMA documents:

- FEMA 551 “Selecting Appropriate Mitigation Measures for Floodprone Structures” (March 2007)
- FEMA “Mitigation Ideas—A Resource for Reducing Risk to Natural Hazards” (January 2013).

The action worksheets included at the end of this annex list the mitigation actions that Pomona would like to pursue in the future to reduce the effects of hazards. The actions are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in Pomona’s priorities.

Table 9.16-18 indicates the range of proposed mitigation action categories. The four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table to further demonstrate the wide range of activities and mitigation measures selected.

Volume I identifies 14 evaluation criteria for prioritizing the mitigation actions. To assist with rating each mitigation action as high, medium, or low priority, a numeric rank is assigned (-1, 0, or 1) for each of the evaluation criteria. Table 2-19 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Table 9.16-18. Analysis of Mitigation Actions by Hazard and Category

Hazard	Actions That Address the Hazard, by Action Category									
	FEMA				CRS					
	LPR	SIP	NSP	EAP	PR	PP	PI	NR	SP	ES
Dam Failure	1	-	-	2	1	-	2	-	-	-
Disease Outbreak	1	-	-	1	1	-	1	-	-	-
Drought	1	-	-	1	1	-	1	-	-	-
Earthquake	1	-	-	1	1	-	1	-	-	-
Extreme Temperature	1	-	-	1	1	-	1	-	-	-
Flood	1	-	-	3	1	-	3	-	-	-
Landslide	1	-	-	1	1	-	1	-	-	-
Severe Weather	1	-	-	1	1	-	1	-	-	-
Severe Winter Weather	1	-	-	3	1	-	3	-	-	-
Wildfire	1	-	-	1	1	-	1	-	-	-

Local Plans and Regulations (LPR)—These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.

Structure and Infrastructure Project (SIP)—These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct structures to reduce the impact of hazards.

Natural Systems Protection (NSP)—These are actions that minimize damage and losses and preserve or restore the functions of natural systems.

Education and Awareness Programs (EAP)—These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities

Preventative Measures (PR)—Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.

Property Protection (PP)—These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.

Public Information (PI)—Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.

Natural Resource Protection (NR)—Actions that minimize hazard loss and preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.

Structural Flood Control Projects (SP)—Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.

Emergency Services (ES)—Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities.

Table 9.16-19. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Other Community Objectives	Total	High / Medium / Low
2024-PomonaV-01	Comprehensive Plan Update	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	High
2024-PomonaV-02	Public Workshops	1	1	1	0	0	0	1	1	1	1	1	1	1	1	11	High
2024-PomonaV-03	Maintain List of Repetitive Flood Property	1	1	1	0	1	1	0	1	1	1	1	1	1	1	12	High
2024-PomonaV-04	Outreach to Dam Owners	1	1	1	0	0	0	1	1	0	1	1	1	1	1	10	Medium

Note: Volume I, Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14).

Action 2024-PomonaV-01. Comprehensive Plan Update

Action Name:	2024-PomonaV-01		
Description of the Problem:	The current comprehensive plan does not incorporate hazard mitigation principles and does not have a strategy to streamline the consideration of the following hazards into its future development and growth: dam/levee failure, disease outbreak, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, or wildfire.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire	
Description of the Solution:	Develop a Comprehensive Plan which incorporates natural disaster mitigation techniques for the Village.		
Lead Agency:	CPG member		
Supporting Agencies:	Village Trustee		
Estimated Cost:	Low (< \$10,000)		
Potential Funding Sources:	BRIC, FMA, HMGP, match from property owners		
Implementation Timeline:	Short Term (<5 years)		
Goals Met:	1, 2, 3, 5, 7		
Benefits:	High (> \$100,000)		
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	An updated comprehensive plan will ensure all community members, including the socially vulnerable, are protected against future natural disasters.		
Impact on Critical Facilities/Lifelines:	This action will protect critical infrastructure from future natural disaster events through Village regulation and code.		
Impact on Capabilities	An updated comprehensive plan will outline the Village’s capabilities when mitigating and responding to natural disaster events.		
Impact on Future Development:	This action will influence and guide sustainable future development in the Village.		
Climate Change Considerations:	This action will guide Village decisions on future climate change impacts to the community and economy.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low

Alternatives	Action	Evaluation
	No action.	Local comprehensive plan out of date.
	Update comprehensive plan without incorporating natural disaster mitigation.	Problem persists.
	Rely on state and federal disaster mitigation assistance.	Not feasible, not an option.

Action 2024-PomonaV-02. Public Workshops

Action Name:	2024-PomonaV-02	
Description of the Problem:	Village residents are not aware of hazards that they are exposed to and what can be done to further protect themselves and their properties from damages. The hazards that the Village is at risk for include dam/levee failure, disease outbreak, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, and wildfire. The Village currently does not have a comprehensive education and outreach program. There is a need to educate residents and businesses about hazard mitigation. preparation, response, and recovery.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	Increase institutional understanding and programmatic consideration of hazard mitigation by holding periodic workshops regarding zoning and planning issues that arise regarding natural hazards and hazard mitigation during Comprehensive Plan development. The Village plans to begin these workshops in conjunction for the development of the Comprehensive Plan.	
Lead Agency:	CPG member	
Supporting Agencies:	Village Trustee	
Estimated Cost:	Medium (\$10,000 to \$100,000)	
Potential Funding Sources:	Local	
Implementation Timeline:	Short Term (<5 years)	
Goals Met:	1, 2, 3	
Benefits:	High (> \$100,000)	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Holding public workshops will ensure all community members, including those socially vulnerable populations, will be educated on hazards present in the Village and ways to mitigate them or seek assistance.	
Impact on Critical Facilities/Lifelines:	N/A	

Impact on Capabilities	This action would allow the local department staff the availability to be able to assist local residents.		
Impact on Future Development:	This action may inform residents on problem areas and could influence decisions on where to build new development and growth.		
Climate Change Considerations:	This action would supply residents with current climate change data to make informed decisions for the future		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	Do nothing.		Lack of public awareness for hazards.
	Send out flyers and materials.		Residents may not be aware of where to access information.
	Ask non-profits to conduct outreach.		Non-profits may be unable or unwilling to provide outreach.

Action 2024-PomonaV-03. Maintain List of Repetitive Flood Property

Action Name:	2024-PomonaV-03		
Description of the Problem:	<p>Based on the FMA definition, there are three Repetitive Loss properties in the Village. These properties exhibit elevated vulnerability and may face increasing risks to flood damage due to changes in precipitation intensity and frequency, raising the possibility for these properties to become Repetitive/Severe Repetitive Loss Properties. These properties may require a disproportionate amount of municipal resources after hazard events if they are damaged.</p> <p>Additionally, the Village was able to secure a grant with Assemblymen Zebrowski to address severe flooding issues in Burgess Meredith Park in the vicinity of Woodfield Lane and the Palisades Interstate Parkway. The runoff from the Parkway routinely floods the community park.</p>		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The Village will continue to identify, and document flooded properties as needed and work with owners to explore possible mitigation opportunities for repetitively flooded properties and areas.		
Lead Agency:	Floodplain manager, Building Department		
Supporting Agencies:	N/A		
Estimated Cost:	Low (< \$10,000)		
Potential Funding Sources:	BRIC, FMA, HMGP, match from property owners		
Implementation Timeline:	Short Term (<5 years)		
Goals Met:	1, 2, 3, 5, 7		

Benefits:	High (> \$100,000)		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR)	<input type="checkbox"/> Natural Systems Protection (NSP)	
	<input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input checked="" type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR)	<input type="checkbox"/> Natural Resource Protection (NR)	
	<input type="checkbox"/> Property Protection (PP)	<input type="checkbox"/> Structural Flood Control Projects (SP)	
	<input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	Collecting data regarding homeowners that reside within flood prone areas provides an opportunity to introduce location-specific opportunities for assistance.		
Impact on Critical Facilities/Lifelines:	Mitigating homes and roads located in the repetitive loss area decreases the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.		
Impact on Capabilities	N/A		
Impact on Future Development:	Increased outreach to homeowners within a flood prone area will limit construction in areas that are prone to hazard events.		
Climate Change Considerations:	Climate change is likely to increase the frequency and severity of severe rainfall, flash flooding, riverine flooding, and coastal flooding from sea level rise and storm surge events. Mitigating structures in the floodplain will reduce the response and recovery costs as a result of these events and decrease the loss of human life as a result of these events.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action.		Problem continues.
	Levee around floodplain.		Costly, not enough room.
	Deploy flood barriers.		Requires deployment. Residents may not have adequate time to deploy, especially those who are elderly or disabled.

Action 2024-PomonaV-04. Outreach to Dam Owners

Action Name:	2024-PomonaV-04		
Description of the Problem:	There are no High Hazard Potential dams in the Village, and no dam inundation areas intersect with the Village. However, the Village could experience downstream impacts from dam/levee failures caused by flooding or severe storms that produce enough precipitation to cause overtopping.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure	<input checked="" type="checkbox"/> Flood	
	<input type="checkbox"/> Disease Outbreak	<input type="checkbox"/> Landslide	
	<input type="checkbox"/> Drought	<input checked="" type="checkbox"/> Severe Storm	
	<input type="checkbox"/> Earthquake	<input type="checkbox"/> Severe Winter Storm	
	<input type="checkbox"/> Extreme Temperature	<input type="checkbox"/> Wildfire	
Description of the Solution:	The Village does not have jurisdiction over these dams. It will conduct outreach to the dam owners to provide resources and materials to ensure inspections and safety procedures are up to date. The Village will work with owners to identify mitigation actions to protect the structures up to the 0.2-percent flood hazard, which will help to limit dam failure and over topping.		
Lead Agency:	Village		
Supporting Agencies:	N/A		

Estimated Cost:	Low (< \$10,000)	
Potential Funding Sources:	Municipal Budget	
Implementation Timeline:	Short Term (<5 years)	
Goals Met:	1, 2, 4, 6	
Benefits:	This action will improve the safety and security of those who live within the dam inundation areas of the dams and increase the resilience of responding agencies. It will also increase communication between the municipality and the dam owners, which can be important during hazard events or other emergencies.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	These dams may protect socially vulnerable populations from severe flooding events. Protecting and mitigating these dams will ensure they are fully operational in protecting vulnerable populations.	
Impact on Critical Facilities/Lifelines:	These dams are critical facilities and educating dam owners on mitigation and safety will ensure they are fully operational.	
Impact on Capabilities	This action will improve planning and response capabilities through the understanding of responsibilities and procedures.	
Impact on Future Development:	Depending on the result of this partnership, future development near the dams may be provided with better protection from dam failure events due to improved procedures and communication, as well as any physical improvements to the structures.	
Climate Change Considerations:	Climate change considerations and projections will be incorporated into the outreach to educate dam owners on proper mitigation techniques.	
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives	Action	Evaluation
	Do nothing.	Problem persists, potential for dam failure.
	Tell dam owners what projects to implement.	No public buy-in, not locally specific to the needs of community.
	Implement mitigation measures around dams.	Costly, may not fully protect/maintain actual dam.

SECTION 9. JURISDICTIONAL ANNEX

9.17 TOWN OF RAMAPO

This jurisdictional annex to the Rockland County Hazard Mitigation Plan (HMP) provides information to assist public and private sectors in the Town of Ramapo with reducing losses from future hazard events. This annex is not guidance of what to do when a disaster occurs; its focus is on actions that can be implemented prior to a disaster to reduce or eliminate damage to property and people. The annex presents a general overview of the Town of Ramapo, describes who participated in the planning process, assesses the Town’s risk, vulnerability, and capabilities, and outlines a strategy for achieving a more resilient community.

9.17.1 Hazard Mitigation Planning Team

The Town of Ramapo identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Town departments. The Program Coordinator of the Office of Emergency Preparedness and Safety represented the community on the Rockland County HMP Planning Partnership and Steering Committee and supported the local planning process requirements by securing input from persons with specific knowledge to enhance the plan. All departments were asked to contribute to the annex development through reviewing and contributing to the capability assessment, reporting on the status of previously identified actions, and participating in action identification and prioritization.

Table 9.17-1 summarizes Town officials who participated in the development of the annex and in what capacity. Additional documentation of the Town’s planning activities through Planning Partnership meetings is included in Volume I.

Table 9.17-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Joshua Hans / Program Coordinator, Office of Emergency Preparedness and Safety Address: 237 Route 59, Suffern, NY 10901 Phone Number: (347) 455-1750 Email: hansj@ramapo.org	Name/Title: Mona Montal / Chief of Staff Address: 237 Route 59, Suffern, NY 10901 Phone Number: (845) 558-7553 Email: montalm@ramapo.org
National Flood Insurance Program Floodplain Administrator	
Name/Title: Ian Smith / Chief Building Inspector Address: 237 Route 59, Suffern, NY 10901 Phone Number: (845) 357-5100 x326 Email: smithl@ramapo.org	
Additional Contributors	
Name/Title: Joshua Hans / Program Coordinator, Office of Emergency Preparedness and Safety Method of Participation: Completed required worksheets; submitted data for building permits; completed mitigation strategies, hazard history, and NFIP surveys; reviewed draft annex	
Name/Title: Mona Montal / Chief of Staff Method of Participation: Completed building permit data collection; reviewed draft annex	
Name/Title: Ian Smith / Chief Building Inspector Method of Participation: Assisted with completion of NFIP survey; reviewed draft annex	
Name/Title: Michael Klatsky Method of Participation: Attending Risk Assessment and Mitigation Actions Workshops	

9.17.2 Municipal Profile

The Town of Ramapo, established in 1791, is located in Rockland County, 28 miles northwest of New York City (Town of Ramapo 2023). The Town has a total area of 61.9 square miles, of which 61.2 square miles is land and 0.7 square miles is water.

The Towns and hamlets within the Town include: the hamlets of Antrim, Hillcrest, Monsey, Ramapo, Sandyfield, Sterlington, Suffern Park, Tallman, and Viola; and the Towns of Airmont, Chestnut Ridge, Hillburn, Kaser, New Hempstead, New Square, Montebello, Sloatsburg, Suffern, and Wesley Hills. The Town contains several water bodies, including segments of the Ramapo River, Cranberry Pond, and Potake Pond.

Research has shown that some populations are at greater risk from hazard events because of decreased resources or physical abilities. These populations can be more susceptible to hazard events based on a number of factors including their physical and financial ability to react or respond during a hazard, and the location and construction quality of their housing. Data from the 2017-2021 American Community Survey indicates that 14.7 percent of the population is five years of age or younger, 9.6 percent is 65 years of age or older, 2.6 percent is non-English speaking, 33.2 percent is below the poverty threshold, and five percent is considered disabled.

9.17.3 Jurisdictional Capability Assessment and Integration

The Town of Ramapo performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Volume I describes the components included in the capability assessment and their significance for hazard mitigation planning. The jurisdictional assessment for this annex includes analyses of the following:

- Planning and regulatory capabilities
- Development and permitting capabilities
- Administrative and technical capabilities
- Fiscal capabilities
- Education and outreach capabilities
- Classification under various community mitigation programs
- Adaptive capacity to withstand hazard events

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into day-to-day local government operations. As part of the hazard mitigation analysis, planning and /policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress toward plan integration. Development of an updated mitigation strategy provided an opportunity for the Town of Ramapo to identify opportunities for integration of mitigation concepts that can be incorporated into municipal procedures.

Planning, Legal, and Regulatory Capability and Integration

Table 9.17-2 summarizes the regulatory tools that are available to the Town of Ramapo.

Table 9.17-2. Planning, Legal, and Regulatory Capability and Integration

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Codes, Ordinances, & Regulations				
Building Code	Yes	Chapter 376 Zoning, Article XIV Administration and Code Enforcement	State, Local	Building Inspector
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> This chapter provides for the Building Inspector and Assistant Building Inspectors, Code Enforcement Officers, or Fire Inspectors, as the Town Board may appoint and deem necessary to enforce the New York State Uniform Fire Prevention and Building Code in the Town of Ramapo, pursuant to § 138 of the Town Law of the State of New York.				
Zoning Code	Yes	Chapter 376 Zoning	Local	Planning Board of the Town of Ramapo
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Zoning Law implements the policies for land use in the Town of Ramapo Comprehensive Plan and is adopted for the protection and promotion of the public health, safety, morals and general welfare of the community to guide future growth and development; to provide adequate light, air, and privacy; and to promote safety from fire, flood, and other dangers; among other objectives.				
Subdivision Code	Yes	Chapter 376 Zoning, Article II Zoning Districts and Zoning Map	Local	Town Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Town has a Planned Unit Development District Ordinance (PUD) that they may place on any tract of land which may consist of one or more tax parcels, in common ownership, within the Northeast Corridor of the Town that are a combined and contiguous minimum of 20 acres within the Town of Ramapo (lands may be separated by a public or private road/highway), are accessible by a public street and have been recommended for PUD development by the Town’s Comprehensive Plan. Applicants must submit a preliminary PUD plan clearly showing a preliminary stormwater management plan and a survey of the property, including mapped floodplains.				
Site Plan Code	Yes	Chapter 376 Zoning, Article IX Site Development Plan Review	Local	Planning Board of the Town of Ramapo
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> In considering and acting upon site development plans, the Planning Board of the Town of Ramapo shall take into consideration the public health, safety and welfare, the comfort and convenience of the public in general and of the prospective occupants of the proposed development and of the immediate neighborhood in particular and may prescribe such appropriate conditions and safeguards as deemed necessary. To the greatest possible extent, development will be in harmony with the natural environment and adequate compensatory devices will be prescribed to offset potential significant deterioration resulting from the project.				
Stormwater Management Code	Yes	Chapter 237 Stormwater Management and Sediment Control and Erosion	Local	Stormwater Management Officer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The purpose of this chapter is to establish minimum stormwater management requirements and controls to protect and safeguard the general health, safety, and welfare of the public residing within the Town of Ramapo.				
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Real Estate Disclosure	Yes	New York State (NYS) mandate, Property Condition Disclosure Act, NY Code – Article 14 §460-467	State, Local	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The NYS mandate requires sellers to disclose to potential buyers whether their property is located in a designated floodplain.				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Growth Management	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Environmental Protection Ordinance(s)	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Flood Damage Prevention Ordinance	Yes	Chapter 149 Flood Damage Prevention	Federal, State, Local	Building Inspector
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Town Board of the Town of Ramapo finds that the potential and/or actual damages from flooding and erosion may be a problem to the residents and that such damages may include destruction or loss of private and public housing, damage to public facilities, both publicly and privately owned, and injury to and loss of human life. The Town Board adopted this ordinance to minimize the threat of such damages and to promote the public health, safety, and property, and appointed the Building Instructor to administer and implement the ordinance. The ordinance requires two feet of freeboard when base flood elevation data are available and three feet when it is not.				
Wellhead Protection	Yes	Chapter 96 Aquifer and Well Field Protection Zone	Local	Department of Public Works, Building Inspector
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> In adopting the Aquifer and Well Field Protection Zone Ordinance, the Town Board is desirous of preventing the introduction to the watershed of materials that pose a threat to the watershed and hence public health and safety. These include chemicals, petroleum products and by-products, salts, and hazardous substances. Since many of the uses generating such products are prohibited by Chapter 376, Zoning, of the Code of the Town of Ramapo, this chapter requires the identification of any potential point of introduction primarily through the site plan review process.				
Emergency Management Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Climate Change Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other: Freeboard	Yes	-	Local, State	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> New York State requires new one- and two-family residences to be built with two feet of freeboard and all other construction types with one foot of freeboard. The Town’s Flood Damage Prevention Ordinance exceeds this requirement by requiring two feet of freeboard when flood elevation data are available and three feet when it is not.				
Planning Documents				
General/Comprehensive Plan	Yes	Town of Ramapo Comprehensive Plan (2004)	Local	Town Board, Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Town of Ramapo Comprehensive Plan is intended to provide a blueprint for the community’s future in relation to goals and objectives applicable to various matters ranging from quality of life to natural resources to community services. The Plan included initiatives to encourage additional drainage facilities with new development and to eliminate an industrial zone near floodplains.				
Capital Improvement Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Disaster Debris Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Floodplain Management or Watershed Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Stormwater Management Plan	Yes	2022-2023 Final Stormwater Report	Local	Department of Public Works
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Stormwater Report records the efforts of the Department of Public Works to fulfill its Stormwater Management Program Plan goals throughout the calendar year. It includes observation such as how many violations occur annual, how many acres are disturbed due to construction, and identification of drainage facilities issues.				
Open Space Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Urban Water Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Habitat Conservation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Economic Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Community Wildfire Protection Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Community Forest Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Transportation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Agriculture Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Climate Action/ Resiliency/Sustainability Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Tourism Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Business/ Downtown Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Other (for example NYRCR, etc.)	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Response/Recovery Planning				
Comprehensive Emergency Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Continuity of Operations Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Substantial Damage Response Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Threat & Hazard Identification & Risk Assessment	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Post-Disaster Recovery Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Public Health Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

Development and Permitting Capability

Table 9.17-3 summarizes the capabilities of the Town of Ramapo to oversee and track development.

Table 9.17-3. Development and Permitting Capability

Indicate if your jurisdiction implements the following	Yes/No	Comment:
Do you issue development permits? <ul style="list-style-type: none"> If you issue development permits, what department is responsible? If you do not issue development permits, what is your process for tracking new development? 	Yes	Building, Planning and Zoning
Are permits tracked by hazard area? (For example, floodplain development permits.)	Yes	Floodplain development permits

Indicate if your jurisdiction implements the following	Yes/No	Comment:
Do you have a buildable land inventory? <ul style="list-style-type: none"> If you have a buildable land inventory, please describe 	No	-
Describe the level of build-out in your jurisdiction.	N/A	The Town is mostly developed. However, the Town may define a Planned Unit Development District as desired. The Town includes State Parks, which limits future development.

Administrative and Technical Capability

Table 9.17-4 summarizes potential staff and personnel resources available to the Town of Ramapo and their current responsibilities that contribute to hazard mitigation.

Table 9.17-4. Administrative and Technical Capabilities

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
<i>Administrative Capability</i>		
Planning Board	Yes	The Town of Ramapo Planning Board consists of seven members and meets once a month. The Planning Board reviews and grants approvals for site plans and subdivisions. They also make recommendations to the Zoning Board of Appeals and Town Board on various zoning and planning matters.
Zoning Board of Appeals	Yes	The Town of Ramapo Zoning Board of Appeals consists of six members and meets once a month. The Zoning Board considers appeals for variances from the zoning ordinance, appeals of the Building Inspector, special permit applications and requests for zoning interpretations.
Planning Department	Yes	The Department of Public Works is responsible for the delivery of various Town services to the Public. The Director of Public Works is responsible for the proper administration and operation of the four divisions that make up the Department of Public Works.
Mitigation Planning Committee	No	-
Environmental Board/Commission	No	Members Regional Watershed Council
Open Space Board/Committee	No	Open Space Initiative is run by the Supervisor
Economic Development Commission/Committee	No	Rockland Economic Development Council Rockland Business Association
Public Works Department	Yes	The Department of Public Works is responsible for the delivery of various Town services to the Public. The Director of Public Works is responsible for the proper administration and operation of the four divisions that make up the Department of Public Works.
Construction/Building/Code Enforcement Department	Yes	The Department of Public Works is responsible for the delivery of various Town services to the Public. The Director of Public Works is responsible for the proper administration and operation of the four divisions that make up the Department of Public Works. The Building Inspector is responsible for enforcing the code.
Emergency Management/Public Safety Department	Yes	The Office of Emergency Preparedness & Safety (OEP) will help manage, plan, and coordinate emergency response and emergency planning and preparedness for the Town of Ramapo.
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	Yes	Protocol for storm sewer inspection and clean-out twice per year

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
Mutual aid agreements	Yes	MUA with the Rockland County Towns of Suffern and Spring valley are full-force and have DPW and Police. Town has 100-man Police and large Highway Department The Town provides 8 Towns with the following services: Police, Highway, Building services and as needed for the Towns of Suffern and Spring Valley
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	No	-
Other: Community Design Review Committee (CDRC)	Yes	This committee, consisting of the Director of Building, Planning and Zoning, the Town Engineer, and Town Planning Consultant, meets once a month to review applications being submitted to the Planning Board. This committee recommends changes prior to the applicant appearing before the Planning Board.
<i>Technical/Staffing Capability</i>		
Planners or engineers with knowledge of land development and land management practices	Yes	Contract out Planning services – Fredrick P. Clark
Engineers or professionals trained in building or infrastructure construction practices	Yes	Department of Building Planning and Zoning
Planners or engineers with an understanding of natural hazards	Yes	Department of Public Works, Engineering Division
Staff with expertise or training in benefit/cost analysis	No	-
Professionals trained in conducting damage assessments	Yes	Highway and Building Departments
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	No	Town relies on Rockland County GIS
Environmental scientist familiar with natural hazards	Yes	Several staff knowledgeable about the hazard areas
Surveyor(s)	Yes	Contracted
Emergency Manager	Yes	Police Chief
Grant writer(s)	Yes	Stormwater Consortium – applies for grants Noted on the Finance Department website
Resilience Officer	No	-
Other (this could include stormwater engineer, environmental specialist, etc.)	No	-

Fiscal Capability

Table 9.17-5 summarizes financial resources available to the Town of Ramapo.

Table 9.17-5. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use? (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	No
Capital improvements project funding	No
Authority to levy taxes for specific purposes	Yes – Fire and EMS
User fees for water, sewer, gas or electric service	User fees for street lights; Water is private company but Town taxes the water; Sewer fee on the tax bill; Gas/Electric is ConEdison – Town and County have a tax
Impact fees for homebuyers or developers of new development/homes	Yes
Stormwater utility fee	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	Yes
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	Open space bonding
Other federal or state Funding Programs	Consolidated Local Street and Highway Improvement Program (CHIPS) NYSDOT for highway; Federal Highway
Open Space Acquisition funding programs	Yes, Open Space Initiative (30 percent open space) – through bonds
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	-

Education and Outreach Capability

Table 9.17-6 summarizes the education and outreach resources available to the Town of Ramapo.

Table 9.17-6. Education and Outreach Capabilities

Outreach Resources	Available? (Yes/No)	Comment:
Public information officer or communications office	No	-
Personnel skilled or trained in website development	No	-
Hazard mitigation information available on your website	Yes	The Town maintains a website has links to the municipal newsletter, local laws and planning documents, the annual budget, county websites, and emergency services.
Social media for hazard mitigation education and outreach	Yes	The Town has Facebook, Twitter (X), and Instagram available to share hazard mitigation education and outreach materials.
Citizen boards or commissions that address issues related to hazard mitigation	No	-
Warning systems for hazard events	Yes	Town has contracted with OnSolve, LLC. To use the CodeRED® Emergency Notification System
Natural disaster/safety programs in place for schools	Yes	-
Organizations that conduct outreach to socially vulnerable populations and underserved populations	No	-
Does the jurisdiction have any public outreach mechanisms / programs in place to inform citizens on natural hazards, risk, and ways to protect themselves during such events?	No	-
If yes, please describe.	-	-

Community Classifications

Table 9.17-7 summarizes classifications for community programs available to the Town of Ramapo.

Table 9.17-7. Community Classifications

Program	Participating? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	No	-	-
New York State Department of Environmental Conservation (NYSDEC) Climate Smart Community	No	-	-
National Weather Service Storm Ready Certification	No	-	-
Firewise Communities classification	No	-	-
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

— = Unavailable

Adaptive Capacity

Adaptive capacity is defined as “the ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or respond to consequences” (IPCC 2022). Each jurisdiction has a unique combination of capabilities to adjust to, protect from, and withstand a future hazard event, future conditions, and changing risk. Table 9.17-8 summarizes the adaptive capacity for each identified hazard of concern and the Town’s capability to address related actions using the following classifications:

- Strong: Capacity exists and is in use.
- Moderate: Capacity might exist; but is not used or could use some improvement.
- Weak: Capacity does not exist or could use substantial improvement.

Table 9.17-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Disease Outbreak	Moderate
Drought	Moderate
Earthquake	Moderate
Extreme Temperature	Moderate
Flood	Moderate
Landslide	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

9.17.4 National Flood Insurance Program Compliance

This section provides specific information on the management and regulation of the regulatory floodplain, including current and future compliance with the National Flood Insurance Program (NFIP). The floodplain administrator listed in Table 9.17-1 is responsible for maintaining this information.

NFIP Summary

Table 9.17-9 summarizes the NFIP statistics for the Town of Ramapo.

Table 9.17-9. Town of Ramapo NFIP Summary of Policy and Claim Statistics

# Policies	44
# Claims (Losses)	422
Total Loss Payments	\$1,972,984
# Repetitive Loss Properties (NFIP definition)	0
# Repetitive Loss Properties (FMA definition)	40
# Severe Repetitive Loss Properties	0
# Policies Within the 1 percent Annual Chance Flood Boundary	0

NFIP Definition of Repetitive Loss: The NFIP defines a repetitive loss property as any insurable building for which two or more claims of more than \$1,000 were paid by the NFIP within any rolling 10-year period since 1978.

FMA Definition of Repetitive Loss: FEMA’s Flood Mitigation Assistance (FMA) program defines a repetitive loss property as any insurable building that has incurred flood-related damage on two occasions, in which the cost of the repair, on average, equaled or exceeded 25 percent of the market value of the structure at the time of each such flood event.

Definition of Severe Repetitive Loss: A residential property covered under an NFIP flood insurance policy and: (a) That has at least four NFIP claim payments over \$5,000 each, and the cumulative amount of such claims payments exceeds \$20,000; or (b) For which at least two separate claims payments have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building. At least two of the claims must have occurred within any 10-year period, more than 10 days apart.

Source: FEMA, December 2023

Note: RL count may include properties also identified as SRL.

Flood Vulnerability Summary

Table 9.17-10 provides a summary of the NFIP program in the Town of Ramapo.

Table 9.17-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	There are several streets and roads that have recently been flood prone during heavy rains.
Do you maintain a list of properties that have been damaged by flooding?	There is no specific list.
Do you maintain a list of property owners interested in flood mitigation?	The town does not maintain a list of property owners interested in flood mitigation.
How many homeowners and/or business owners are interested in mitigation (elevation or acquisition)?	Unknown
Are any RiskMAP projects currently underway in your jurisdiction? <ul style="list-style-type: none"> If so, state what projects are underway. 	No
How do you make Substantial Damage determinations?	The Town does not make these determinations.*
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	None
How many properties have been mitigated (elevation or acquisition) in your jurisdiction? <ul style="list-style-type: none"> If there are mitigation properties, how were the projects funded? 	Some town properties have been mitigated by raising structures above flood levels. This was funded by town budget.

NFIP Topic	Comments
Do your flood hazard maps adequately address the flood risk within your jurisdiction? <ul style="list-style-type: none"> If not, state why. 	No. More frequent and intense rainfall has changed the risk profile.
NFIP Compliance	
What local department is responsible for floodplain management?	Building, Planning, and Zoning Department. The Chief Building Inspector is the Floodplain Administrator.
Are any certified floodplain managers on staff in your jurisdiction?	Yes. The town’s consulting firm has CFMs.
Do you have access to resources to determine possible future flooding conditions from climate change?	Via resources from federal and state
Does your floodplain management staff need any assistance or training to support its floodplain management program? <ul style="list-style-type: none"> If so, what type of assistance/training is needed? 	Yes. More up to date mapping to reflect real world conditions.
Provide an explanation of NFIP administration services you provide (e.g., permit review, GIS, education/outreach, inspections, engineering capability)	Permit review, inspections
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	Through the permitting process
What are the barriers to running an effective NFIP program in the community, if any?	Lack of mapping resources and funding
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? <ul style="list-style-type: none"> If so, state the violations. 	No
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	May 20, 2016
What is the local law number or municipal code of your flood damage prevention ordinance?	Chapter 149
What is the date that your flood damage prevention ordinance was last amended?	2012
Does your floodplain management program meet or exceed minimum requirements? <ul style="list-style-type: none"> If exceeds, in what ways? 	Meets the minimum requirements
Are there other local ordinances, plans or programs (e.g., site plan review) that support floodplain management and meeting the NFIP requirements? For instance, does the planning board or zoning board consider efforts to reduce flood risk when reviewing variances such as height restrictions?	Yes. Through local zoning laws- the planning and zoning board review items.
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	The town is not a member of the CRS program. We are interested in finding out more information about the program.

*Note: *The Town reported it does not have a process to make substantial damage determinations; however, during this planning process, it was confirmed that substantial damage determination provisions are established in both the adopted NFIP ordinance and adopted building code. This response has not been changed to accurately reflect the tools leveraged by the Town to mitigate risks.*

9.17.5 Growth/Development Trends

Understanding how past, current, and projected development patterns have or are likely to increase or decrease risk in hazard areas is a key component to appreciating a jurisdiction’s overall risk to its hazards of concern. Recent and expected future development trends, including major residential/commercial development and major infrastructure development, are summarized in Table 9.17-11 through Table 9.17-13.

Table 9.17-11. Number of Building Permits for New Construction Issued Since the Previous HMP

	New Construction Permits Issued			Total
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	
2019				
Total Permits	33	69	0	102
Permits within SFHA	0	0	0	0
2020				
Total Permits	79	36	0	115
Permits within SFHA	0	0	0	0
2021				
Total Permits	78	55	0	133
Permits within SFHA	0	0	0	0
2022				
Total Permits	79	49	0	128
Permits within SFHA	0	0	0	0
2023				
Total Permits	At the time of the plan update, the Town was unable to provide 2023 data.			
Permits within SFHA				

SFHA = Special Flood Hazard Area (1 percent flood event)

Table 9.17-12. Recent Major Development and Infrastructure from 2018 to Present

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
The Town has had no recent major development or infrastructure between 2018 to present.					

* Only location-specific hazard zones or vulnerabilities identified.

Table 9.17-13. Known or Anticipated Major Development and Infrastructure in the Next Five Years

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
There are no known or anticipated major development of infrastructure in the Town in the next five years.					

* Only location-specific hazard zones or vulnerabilities identified.

9.17.6 Jurisdictional Risk Assessment

The hazard profiles in Volume I provide detailed information regarding each planning partner’s vulnerability to the identified hazards, including summaries of the Town of Ramapo’s risk assessment results and data used to determine the hazard ranking. Key local risk assessment information is presented below.

Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Town are shown in Figure 9.17-1 through Figure 9.17-2. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps are provided only for hazards that can be identified clearly using mapping techniques and technologies and for which Ramapo has significant exposure. The maps show the location of potential new development, where available.

Figure 9.17-1. Town of Ramapo Flood and Dam Inundation Hazard Area Extent and Location

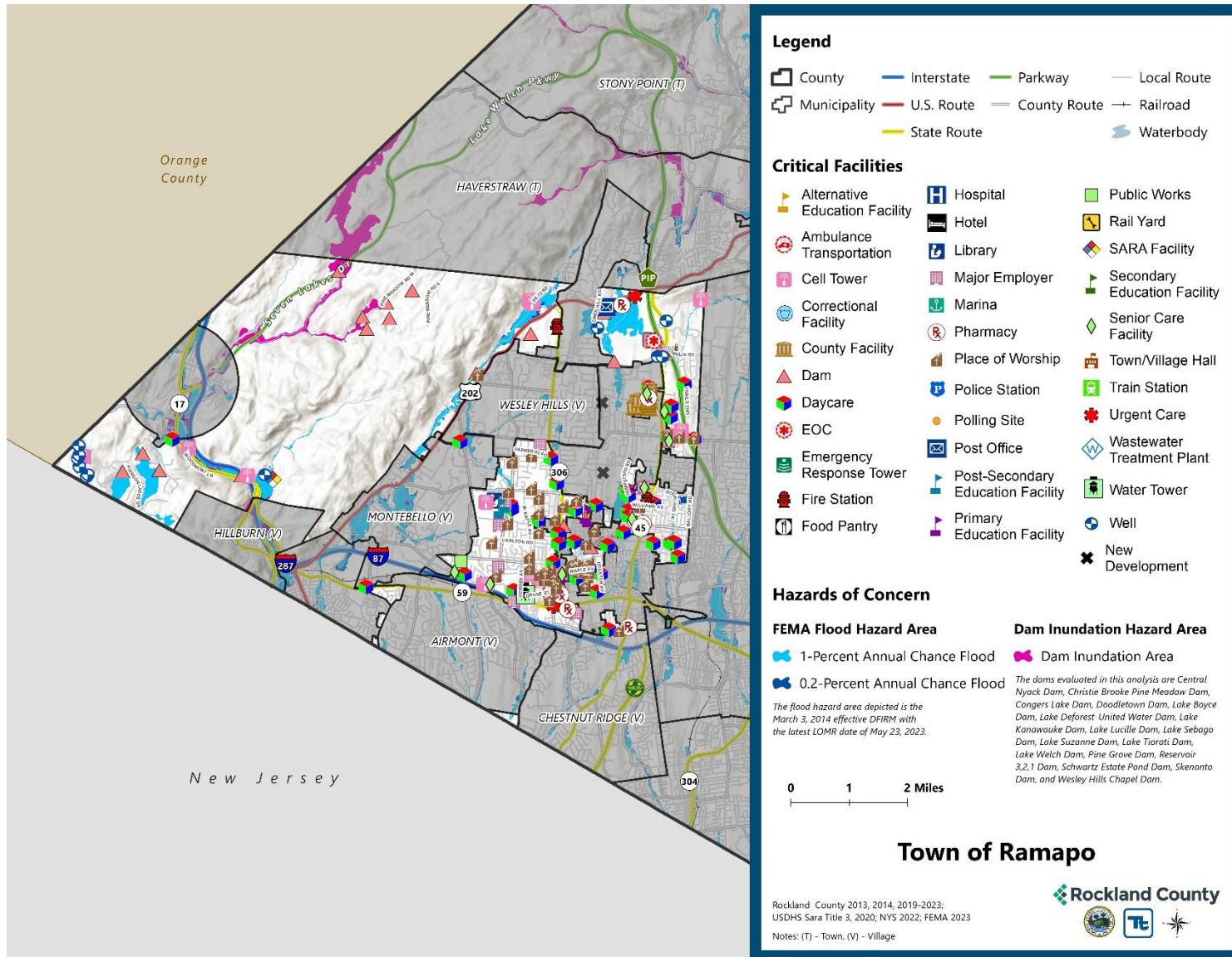
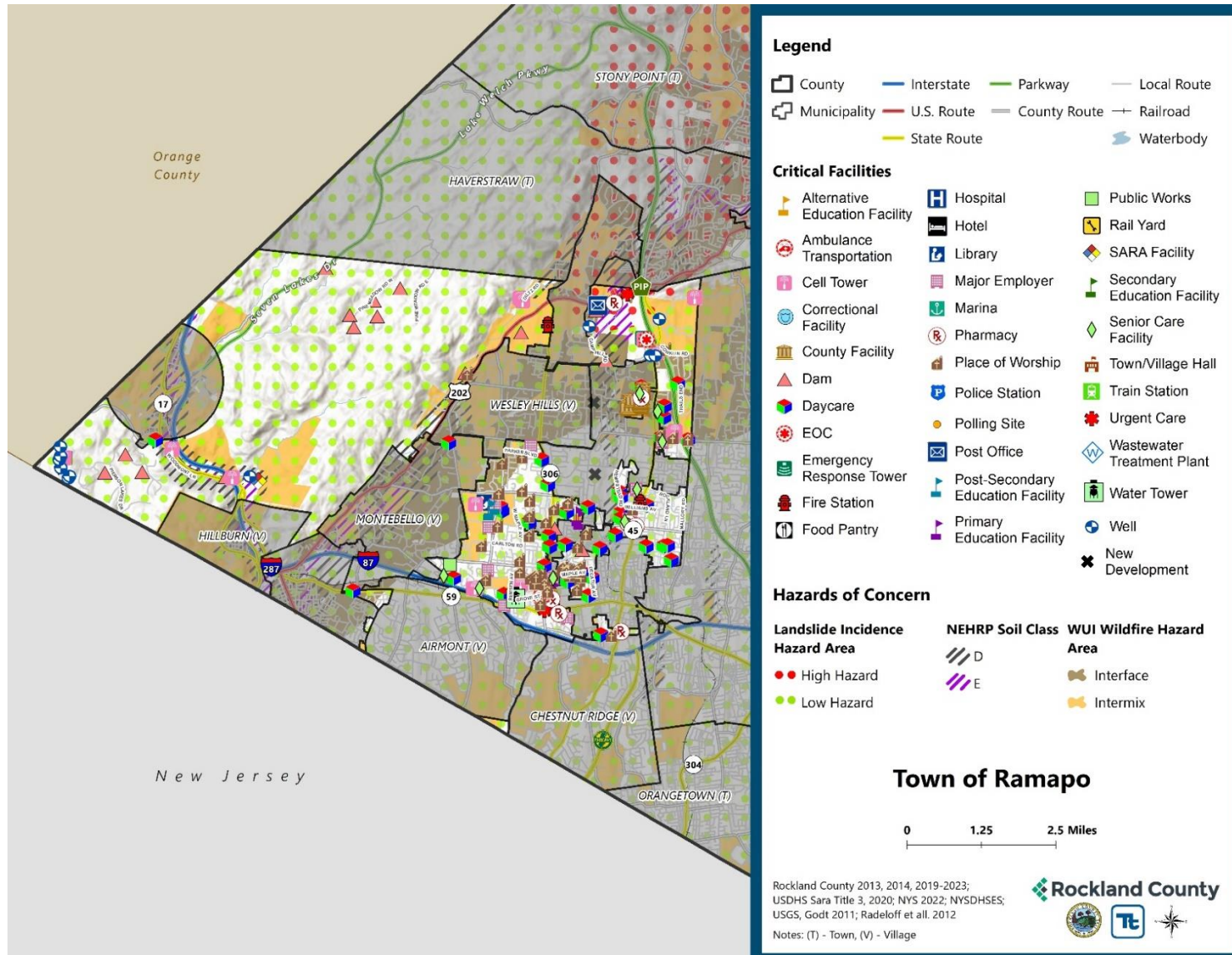


Figure 9.17-2. Town of Ramapo Landslide, Earthquake, and Wildfire Hazard Area Extent and Location



Hazard Event History

The history of natural and non-natural hazard events in the Town of Ramapo is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 9.17-14 provides details on loss and damage in the Town during hazard events since the last hazard mitigation plan update.

Table 9.17-14. Hazard Event History in the Town of Ramapo

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Summary of Damage and Losses in the Town
Jan 20, 2020 - May 11, 2023	New York Covid-19 (3434-EM-NY, 4480-DR-NY)	Yes	The Covid-19 pandemic resulted in nationwide shutdowns, social distancing and masking requirements, and immunization efforts. Since the start of the pandemic, roughly 950 deaths have been reported in Rockland County. The federal Public Health Emergency expired in May 2023 but illness continues to occur as the virus shifts to becoming endemic.	\$229,620.67 in damages
August 4, 2020	New York Tropical Storm Isaias (4567-DR-NY)	Yes	The center of Isaias passed about 65 miles west of New York City at 3 pm on August 4, 2020. Tropical storm force winds extended well east of the center of circulation. In addition, 1 to 3 inches of rainfall, highest west, were recorded across the county. These types of winds and rainfall across the area resulted in numerous trees and tree limbs being downed, power outages, damages to homes and automobiles, and disruption to transit.	\$225,563.42 in damages
September 1-3, 2021	New York Remnants of Hurricane Ida (3572-EM-NY, 4615-DR-NY)	Yes	Extremely heavy rainfall associated with the remnants of Hurricane Ida overspread southeast New York during the evening of September 1 and continued through the early morning hours of September 2. Rainfall totals ranged from 5-8 inches across much of the region, with much of that rain falling in just a few hours. This resulted in widespread catastrophic flash flooding.	\$48,721.18 in damages and still ongoing
July 9-10, 2023	Severe Storm	No	Severe storms and flooding resulted in road closures, including portions of the Palisades Interstate Parkway, throughout Rockland County.	The municipality is currently involved in a FEMA project as a result of damages incurred from this event.

EM = Emergency Declaration (FEMA)
 FEMA = Federal Emergency Management Agency
 DR = Major Disaster Declaration (FEMA)
 N/A = Not applicable

Hazard Ranking and Vulnerabilities

The hazard profiles in Volume I have detailed information regarding each planning partner’s vulnerability to the identified hazards. The following summarizes presents key risk assessment results for the Town of Ramapo.

Hazard Ranking

The participating jurisdictions have differing degrees of vulnerability to the hazards of concern, so each jurisdiction ranked its own degree of risk to each hazard. The community-specific hazard ranking is based on problems and impacts identified by the risk assessment presented in Volume I. The ranking process involves an assessment of the likelihood of occurrence for each hazard; the potential impacts of the hazard on people, property, and the economy; community capabilities to address the hazard; and changing future climate conditions. Ramapo reviewed the County hazard ranking and individual results to assess the relative risk of the hazards of concern to the community. During the review of the hazard ranking, the Town indicated the following:

- During the review of the hazard/vulnerability risk ranking, the Town indicated the rankings were accurate.

Table 9.17-15 shows Ramapo’s final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 9.17-15. Hazard Ranking

Hazard	Rank
Dam Failure	Low
Disease Outbreak	Medium
Drought	Medium
Earthquake	Low
Extreme Temperature	Medium
Flood	Medium
Landslide	Low
Severe Weather	High
Severe Winter Weather	High
Wildfire	Medium

Note: The scale is based on the hazard rankings established in Volume I, modified as appropriate based on review by the jurisdiction

Critical Facilities

Table 9.17-16 identifies critical facilities in the community located in the 1 percent and 0.2 percent annual chance floodplains.

Table 9.17-16. Critical Facilities Flood Vulnerability

Name	Type	Exposure		Addressed by Proposed Action	Already Protected to 0.2 percent Flood Level (describe protections)
		1 percent Event	0.2 percent Event		
Lake Suzanne Dam	Dam	Yes	Yes	2024-RamapoT-04	No
Minisceongo Golf Course Dam	Dam	Yes	Yes	2024-RamapoT-04	No
Potake Lake Dam	Dam	Yes	Yes	2024-RamapoT-04	No
Ramapo Foundry Dam	Dam	Yes	Yes	2024-RamapoT-04	No
Tivoli Lake Dam	Dam	Yes	Yes	2024-RamapoT-04	No

Name	Type	Exposure		Addressed by Proposed Action	Already Protected to 0.2 percent Flood Level (describe protections)
		1 percent Event	0.2 percent Event		
Tora High School Dam	Dam	Yes	Yes	2024-RamapoT-04	No
Sprint PCS 58	Cell Tower	Yes	Yes	2024-RamapoT-05	No
Sprint PCS 71	Cell Tower	Yes	Yes	2024-RamapoT-05	No
Sprint PCS 87	Cell Tower	Yes	Yes	2024-RamapoT-05	No
AT&T Wireless 115	Cell Tower	Yes	Yes	2024-RamapoT-05	No

Source: Rockland County 2023, FEMA

In addition to critical facilities that are exposed to flooding, the following high hazard dams are located in or could impact the Town of Ramapo:

- Potake Lake Dam – Suez Water New York
- Tivoli Lake Dam – Pierson Lake Homeowner’s Association
- Lake Sebago Dam – New York Office of Parks, Recreation and Historic Preservation, Palisades Interstate Park Commission
- Lake Suzanne Dam – Rockland County Highway Department

Identified Issues

After review of the Town of Ramapo’s hazard event history, hazard rankings, hazard location, and current capabilities, the Town of Ramapo identified the following vulnerabilities within their community:

- Rainfall events of more than three inches pose significant risks to life, property, and safety in the Town of Ramapo. Response to this type of event is a multi-stakeholder endeavor that requires inter-agency coordination. A flash-flood emergency plan managed by the Town of Ramapo would be the mitigation strategy to address this coordination gap on a local level.
- Main feeder power lines are vulnerable to winter storms and high winds. This causes power outages when lines are compromised during storms.
- Frequently during rainfall events, the Piermont and New Hempstead branches of the former Conrail railroad system sees significant flooding. This flooding is likely caused due to the natural topography of the surrounding neighborhoods because the railroad was built as close to sea level as possible as is constructed at the lowest point in every community to avoid any elevations.
- There are multiple dams, which are critical infrastructures, located in the 1- and 0.2-percent flood hazard areas. The Town also has potential impacts from multiple high-hazard potential dams (Potake Lake Dam, Tivoli Lake Dam, Lake Sebago Dam, Lake Suzanne Dam). These structures have the potential to impact those living nearby.
- Critical facilities located in the floodplain are not only susceptible to flood damage but also create unnecessary complications for the municipality during an emergency event and post-disaster recovery.
- Repetitively flooded properties place an undue stress on the property owner and Town and efforts should be made to mitigate them.

- The municipality does not have a Substantial Damage Management Plan in place, nor do they have a standard process in place when conducting substantial damage determinations. The municipality has substantial damage determination provisions in both the adopted NFIP ordinance and adopted building code, but staff are unaware of these provisions and do not leverage them.
- The Town does not have a formalized list of damaged properties or property owners which may be interested in flood mitigation measures, such as elevation or acquisition.
- The Town does not have any organizations that conduct outreach to socially vulnerable populations and underserved populations.
- The current comprehensive plan does not integrate hazard mitigation or hazard areas.
- There is an inadequately sized culvert in Spring Valley which contributes to flooding.
- There are flood prone roadways in the Town.
- The Town is currently not in the CRS program.
- The Town does not have backup power at several pump stations and in the event of a power outage, the pump stations will not function properly.

**This issue was identified as a specific area of concern based on resident response to the Rockland County Hazard Mitigation Citizen survey.*

9.17.7 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and prioritizes actions to address over the next five years.

Past Mitigation Initiative Status

Table 9.17-17 indicates progress on the Town's mitigation strategy identified in the 2019 HMP. Actions that are still recommended but not completed or that are in progress are carried forward and combined with new actions as part of the mitigation strategy for this plan update. Previous actions that are now ongoing programs and capabilities are indicated as such and are presented in the capability assessment earlier in this annex.

Additional Mitigation Efforts

In addition to the mitigation initiatives completed in Table 9.17-17, the Town of Ramapo did not identify any mitigation efforts completed since the last HMP.

Table 9.17-17. Status of Previous Mitigation Actions

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
Ramapo-1	Quarry Ridge Flood Control	Flood, Severe Storm, Nor'easter	Attorney's Office – Property manager	<p>Flooding along the Mahwah River in the Squires Gate region of the Town of Suffern - floods frequently.</p> <p>The Quarry Ridge flood control project is a unique re-utilization of a closed stone quarry. The purpose of the flood control project is to reduce the frequency of flooding along the Mahwah River in the Squires Gate region of the Town of Suffern, NY.</p>	<p>1. No Progress / Discontinued</p> <p>2. Project was part of a development that was cancelled</p>	<p>1. Discontinued</p> <p>2. Not Applicable</p> <p>3. Project was part of a development that was cancelled</p>
Ramapo-2	Spring Valley Culvert Upgrades	Flood, Severe Storm, Nor'easter	Town Engineer, County Engineer, Town of Spring Valley	<p>Inadequate culvert in Spring Valley.</p> <p>Upgrade culvert in Spring Valley (upstream of Pascack Brook By-Pass Flood Mitigation Project).</p>	<p>1. No Progress</p> <p>2. Project has not progressed due to other Town obligations.</p>	<p>1. Include</p> <p>2. Keep as is</p> <p>3. N/A</p>
Ramapo-3	Comprehensive Plan Update	All Hazards	Town Planning Department, County Planning Department, Town Planning Department	<p>The current comprehensive plan does not integrate hazard mitigation or hazard areas.</p> <p>Integrate hazard mitigation and hazard areas into local comprehensive plans; a courtesy review of draft plans by the County Planning Department.</p>	<p>1. No Progress</p> <p>2. Plan has not been updated due to other Town matters.</p>	<p>1. Include</p> <p>2. Keep as is</p> <p>3. N/A</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
Ramapo-4	Public Workshops	All Hazards	Town Engineer/DPW	Currently, the Town does not have a program to discuss zoning and planning issues that arise as a result of natural hazards and hazard mitigation. Hold periodic workshops regarding zoning and planning issues that arise regarding natural hazards and hazard mitigation.	1. Discontinued 2. Planning and zoning requirements are listed on applications.	1. Discontinue 2. N/A 3. Planning and zoning requirements are listed on applications.
Ramapo-5	Flood Prone Roadways	Flood, Severe Storm	Town DPW, County DPW	Flood prone roadways in the Town - need to develop solutions to resolve the issue. Develop specific mitigation solutions for flood prone road systems (roads, bridges, intersections, drainage, etc.) under the leadership of County DPW.	1. No Progress 2. Town needs to identify which roadways to focus on.	1. Include 2. Keep as is 3. N/A
Ramapo-6	Certified Floodplain Managers	Flood, Severe Storm	Town Floodplain Administrator	Floodplain management and ordinance enforcement staff are not Certified Floodplain Managers. Require staff involved in floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs).	1. Discontinued 2. The Town's consulting firm has CFMs.	1. Discontinue 2. N/A 3. The Town's consulting firm has CFMs.
Ramapo-7	Community Rating System	Flood, Severe Storm	Town Floodplain Administrator	The Town is currently not in the CRS program. Join the Community Rating System (CRS).	1. No Progress 2. The Town has not been able to evaluate the benefits, would is still considering joining the program.	1. Include 2. Keep as is 3. N/A

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
Ramapo-8	Pascack Brooke Easement	Flood, Severe Storm, Severe Winter Storm	County Drainage Agency	<p>The bank erosion threatens at a minimum one home and potentially others.</p> <p>Mitigation measures are now required and engineered concrete structures are needed to stabilize the banks along with erosion control measures that include plantings.</p>	<p>1. No Progress / Discontinued</p> <p>2. As per DPW and town attorney- there are no easements for this area making this the responsibility of the home owners and not the Town.</p>	<p>1. Discontinue</p> <p>2. Not Applicable</p> <p>3. As per DPW and town attorney- there are no easements for this area making this the responsibility of the home owners and not the Town.</p>
Ramapo-9	Emergency Generators at Critical Facilities	All Hazards	Town DPW	<p>The Town does not have backup power at several pump stations and in the event of a power outage, the pump stations will not function properly.</p> <p>Install permanently mounted generators at pump stations including Rodman Place, Longbow Road, Hawk Street, Sergio Court, and Bayard Lane. This project will help ensure the continued operations of the Town's Sanitary Sewer system during storm events involving power outages. Additionally, it will improve the Town's ability to respond to emergencies as the labor force and equipment will be available for assisting with other Town Emergency Protective Measures.</p>	<p>1. In Progress</p> <p>2. Purchased and install backup power at the Town fuel facility, DPW and sewer buildings.</p>	<p>1. Include</p> <p>2. Purchase and install permanently mounted generators at pump stations including Rodman Place, Longbow Road, Hawk Street, Sergio Court, and Bayard Lane. This project will help ensure the continued operations of the Town's Sanitary Sewer system during storm events involving power outages. Additionally, it will improve the Town's ability to respond to emergencies as the labor force and equipment will be available for assisting with other Town Emergency Protective Measures.</p> <p>3. Not Applicable</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
Ramapo-10	Continuity of Communications	All Hazards	Hatzoloh Ambulance Company (Kaser and Monsey)	<p>Hatzoloh does not have a backup phone system. In the event of an emergency, there can be issues with connecting to emergency responders.</p> <p>Hatzoloh (Town-funded ambulance company) plans to set up a backup phone system that will be able to maintain the integrity of the Hatzoloh phone number at all times so that incoming calls will get through even in a state of emergency and so that dispatchers will be able to contact emergency responders without issues.</p>	<p>1. No Progress / Discontinued 2. Redundancy has been provided through other means.</p>	<p>1. Discontinue 2. Not Applicable 3. Redundancy has been provided through other means.</p>
Ramapo-11	Emergency Equipment	All Hazards	Hatzoloh Ambulance Company (Kaser and Monsey)	<p>Inadequate equipment for Hatzoloh.</p> <p>Purchase equipment enabling Hatzoloh to save lives such as generators, light towers, Command Vehicles.</p>	<p>1. No Progress / Discontinued 2. No longer needed.</p>	<p>1. Discontinue 2. Not Applicable 3. There is no longer a needed for these items to be purchased.</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
Ramapo-12	Review Codes and Ordinances	All Hazards	Building Inspector/Planning Board/Zoning Board	<p>Current codes and ordinances do not identify hazards.</p> <p>The Town would like to review and potentially update their existing local codes/ordinances against the identified hazards to determine whether there needs to be any amendments to address identified hazards and, where a need is identified; modify/amend the codes/ordinances as applicable.</p>	<p>1. Ongoing Capability</p> <p>2. Codes and ordinances are reviewed continuously to identify room for amendments.</p>	<p>1. Discontinue</p> <p>2. N/A</p> <p>3. Ongoing capability. Codes and ordinances are reviewed continuously to identify room for amendments.</p>
Ramapo-13	Elevate Pump Station Electrical Components	Flood	DPW/Sewer Department	<p>The Town owns critical assets located in the floodplain that become inundated during flood events.</p> <p>Elevate the electrical components to all critical assets including the pump stations and potable wells located in the floodplain, specifically the Sewer Pump Station off Camp Hill Road and Scuffy Day Camp North Well, to the 500-year flood elevation.</p>	<p>1. In Progress</p> <p>2. Pump Station off Camp Hill is under review as Northern Ramapo development plan moves ahead.</p>	<p>1. Include</p> <p>2. Include mention of any newly identified critical facilities in the floodplain and reword action as appropriate.</p> <p>3. Not Applicable</p>

Proposed Hazard Mitigation Initiatives for the HMP Update

Ramapo participated in the mitigation strategy workshop for this HMP to identify appropriate actions to include in a local hazard mitigation strategy. Its comprehensive consideration of all possible activities to address hazards of concern included review of the following FEMA documents:

- FEMA 551 “Selecting Appropriate Mitigation Measures for Floodprone Structures” (March 2007)
- FEMA “Mitigation Ideas—A Resource for Reducing Risk to Natural Hazards” (January 2013).

The action worksheets included at the end of this annex list the mitigation actions that Ramapo would like to pursue in the future to reduce the effects of hazards. The actions are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in the Town’s priorities.

Table 9.17-18 indicates the range of proposed mitigation action categories. The four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table to further demonstrate the wide range of activities and mitigation measures selected.

Volume I identifies 14 evaluation criteria for prioritizing the mitigation actions. To assist with rating each mitigation action as high, medium, or low priority, a numeric rank is assigned (-1, 0, or 1) for each of the evaluation criteria. Table 9.17-19 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Table 9.17-18. Analysis of Mitigation Actions by Hazard and Category

Hazard	Actions That Address the Hazard, by Action Category									
	FEMA				CRS					
	LPR	SIP	NSP	EAP	PR	PP	PI	NR	SP	ES
Dam Failure	3	1	-	1	3	1	1	-	-	3
Disease Outbreak	1	-	-	1	1	-	1	-	-	1
Drought	2	-	-	1	2	-	1	-	-	1
Earthquake	2	1	-	1	2	1	1	-	-	2
Extreme Temperature	2	1	-	1	2	1	1	-	-	2
Flood	7	4	-	2	7	4	2	-	3	4
Landslide	3	1	-	1	3	1	1	-	-	2
Severe Weather	5	2	1	1	5	3	1	-	1	4
Severe Winter Weather	2	1	1	1	2	2	1	-	-	3
Wildfire	2	1	-	1	2	1	1	-	-	2

Local Plans and Regulations (LPR)—These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.

Structure and Infrastructure Project (SIP)—These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct structures to reduce the impact of hazards.

Natural Systems Protection (NSP)—These are actions that minimize damage and losses and preserve or restore the functions of natural systems.

Education and Awareness Programs (EAP)—These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities

Preventative Measures (PR)—Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.

Property Protection (PP)—These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.

Public Information (PI)—Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.

Natural Resource Protection (NR)—Actions that minimize hazard loss and preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.

Structural Flood Control Projects (SP)—Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.

Emergency Services (ES)—Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities

Table 9.17-19. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Other Community Objectives	Total	High / Medium / Low
2024-RamapoT-01	Flash Flood Emergency Plan	1	1	1	1	1	1	0	1	1	1	1	1	1	0	12	High
2024-RamapoT-02	Underground Powerlines	0	1	1	1	0	0	0	1	0	1	1	0	1	0	7	Medium
2024-RamapoT-03	Piermont Railway Flood Mitigation	0	1	1	1	1	0	0	0	1	1	1	0	0	0	7	Medium
2024-RamapoT-04	Dam Owner Partnership	1	1	1	1	1	1	0	1	1	1	1	1	1	0	12	High
2024-RamapoT-05	Critical Facilities in the Floodplain	1	1	1	1	1	0	0	1	1	0	1	1	1	0	10	Medium
2024-RamapoT-06	Repetitive and Severe Repetitive Loss Properties	1	1	1	1	1	0	1	1	1	1	1	1	0	1	12	High
2024-RamapoT-07	Substantial Damage Management Plan	0	1	1	1	1	1	0	1	1	1	1	1	1	0	11	High
2024-RamapoT-08	Flood Mitigation Interest	1	1	1	1	1	1	1	1	1	0	1	1	1	1	13	High
2024-RamapoT-09	Socially Vulnerable Populations Outreach	1	0	1	1	1	1	0	1	1	1	1	1	1	1	12	High
2024-RamapoT-10	Comprehensive Plan Update	1	1	1	1	1	1	0	1	1	1	0	1	0	1	11	High
2024-RamapoT-11	Spring Valley Culvert	1	1	1	1	1	0	1	1	1	1	1	1	1	0	12	High
2024-RamapoT-12	Flood Prone Roadways	0	1	1	1	1	0	1	0	1	0	1	1	0	1	9	Medium
2024-RamapoT-13	Community Rating System (CRS) Program	0	1	1	1	1	1	0	1	1	0	1	1	0	1	10	Medium
2024-RamapoT-14	Emergency Generators at Critical Facilities	0	1	1	1	1	0	0	1	1	1	0	1	1	1	10	Medium

Note: Volume I, Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14).

Action 2024-RamapoT-01. Flash Flood Emergency Plan

Action Name:	2024-RamapoT-01. Flash Flood Emergency Plan		
Description of the Problem:	Rainfall events of 3+ inches pose significant risks to life, property, and safety in the Town of Ramapo.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	Create a flash-flood emergency plan.		
Lead Agency:	Office of Emergency Preparedness and Safety		
Supporting Agencies:	Town Administration, Surrounding Jurisdictions, Rockland County		
Estimated Cost:	Medium		
Potential Funding Sources:	Town Budget, EMGP		
Implementation Timeline:	Within 4 years		
Goals Met:	1, 2, 3, 5, 7		
Benefits:	This plan will be a multi-stakeholder endeavor that requires inter-agency coordination. The plan will identify areas most impacted by heavy rain and flash flood events and assign roles and responsibilities to responding agencies.		
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	Areas that vulnerable to frequency or severe flooding events will be identified within the plan. Populations in these areas will be recognized and assessed.		
Impact on Critical Facilities/Lifelines:	This action will identify measures to protect life, property, and the environment from the impacts of heavy rain and flash flooding events. The plan will identify the roles and responsibilities of responding agencies.		
Impact on Capabilities	This action will create a new planning capability of the Town, enhancing its response and recovery capabilities.		
Impact on Future Development:	Not applicable		
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low

Alternatives	Action	Evaluation
	No action	Current problem remains
	Write plan without consulting primary stakeholders	Input may be incomplete
	Focus only on areas currently experiencing flash flooding	Plan will only be applicable for a period of time

Action 2024-RamapoT-02. Underground Powerlines

Action Name:	2024-RamapoT-02. Underground Powerlines	
Description of the Problem:	Main feeder power lines are vulnerable to winter storms and high winds. This causes power outages when lines are compromised during storms.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	Bury above-ground utility lines to mitigate damages.	
Lead Agency:	Town Administration	
Supporting Agencies:	Town Engineering, Utility Provider, Town Public Works, Rockland County	
Estimated Cost:	High	
Potential Funding Sources:	FEMA BRIC, Town Budget	
Implementation Timeline:	5+ years	
Goals Met:	2, 5	
Benefits:	This action will remove or reduce critical facility and community lifeline vulnerability to hazards, ensure continuity of operations, and remove or reduce safety risks for first responder.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Relocating the identified structures will benefit socially vulnerable populations, as individuals within these populations rely on resources from various government facilities, transportation facilities, and medical and senior care facilities. Protection of critical facilities provides an opportunity for first responders, utility workers, and emergency managers to stage and deploy resources to vulnerable and hazard prone areas.	
Impact on Critical Facilities/Lifelines:	The utilization of power is critical during an emergency. This action protects public health and safety and ensures continued operation of a critical facility and its essential functions during a power outage.	
Impact on Capabilities	The action will increase the Town’s capabilities during power outage events.	

Impact on Future Development:	Future development in the area will need to be connected to utility lines, which provide power. This action results in protection of a critical facility that could support future development.		
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related disaster events. This action provides a method of mitigating impacts from severe storms.		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem remains
	Insulate power lines		May lead to overheating
	Knock snow and ice off power lines		May knock down wires and interrupt power distribution

Action 2024-RamapoT-03. Piermont Railway Flood Mitigation

Action Name:	2024-RamapoT-03. Piermont Railway Flood Mitigation	
Description of the Problem:	Frequently during rainfall events, the Airmont and New Hempstead branches of the former Conrail railroad system sees significant flooding. This flooding is likely caused due to the natural topography of the surrounding neighborhoods because the railroad was built as close to sea level as possible as is constructed at the lowest point in every community to avoid any elevations.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	Conduct a study to identify best method of flood mitigation to reduce aerial floods. A possible method would be to construct underground storm water runoff tanks underneath the railway to help collect runoff and prevent the flooding and ground instability.	
Lead Agency:	Town Administration	
Supporting Agencies:	Metro North Railroad, Village of Airmont, Village of New Hempstead, Village of Spring Valley, County of Rockland	
Estimated Cost:	High, \$500 million	
Potential Funding Sources:	CDBG, US ACE, FEMA HMGP, BRIC	
Implementation Timeline:	5+ years	
Goals Met:	2, 4, 5	
Benefits:	This action will create a reduction in land impacted by flooding conditions by performing a study to identify the most feasible mitigation methods to collect runoff.	
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)

Impact on Socially Vulnerable Populations:	Not applicable. This railroad system is no longer in operation and the lands on which it traverses does not impact socially vulnerable populations.		
Impact on Critical Facilities/Lifelines:	Not applicable. This railroad system is no longer in operation and the lands on which it traverses does not impact critical facilities.		
Impact on Capabilities	The resulting study from this action will be a new capability for the Town, despite the railway no longer being in operation.		
Impact on Future Development:	The reduction in flooding on the land of the old railroad system may provide area for future land development opportunities.		
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events. As sea level rises due to climate change, the area of the flood hazard may expand.		
Priority: Check one	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem remains
	Construct floodwall along river		Cost prohibitive
	Raise banks of river to increase storage capacity		Cost prohibitive

Action 2024-RamapoT-04. Dam Owner Partnership

Action Name:	2024-RamapoT-04. Dam Owner Partnership		
Description of the Problem:	There are multiple dams, which are critical facilities, located in the 1- and 0.2-percent flood hazard areas that contain or are adjacent to existing development. The Town also has potential impacts from multiple high-hazard potential dams (Potake Lake Dam, Tivoli Lake Dam, Lake Sebago Dam, Lake Suzanne Dam) located outside of its boundaries.. The municipality does not own all the dams in its jurisdictions and cannot itself implement mitigation actions to the structures.		
Hazard(s) of Concern: Check all that apply	<input checked="" type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	Work with the owners of the dams to ensure inspections and safety procedures are up to date. Identify mitigation actions to ensure the integrity of the dams and that it is protected up to the 0.2-percent flood hazard area.		
Lead Agency:	Office of Emergency Preparedness and Safety		
Supporting Agencies:	Town Administration, Dam Owners, NYSDEC		
Estimated Cost:	Low		
Potential Funding Sources:	Town Budget		
Implementation Timeline:	Within five years		

Goals Met:	1, 2, 3, 5		
Benefits:	This action will improve the safety and security of those who live within the dam inundation areas of the dams and increase the resilience of responding agencies. It will also increase communication between the municipality and the dam owners, which can be important during hazard events or other emergencies.		
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	The action will result in better preparedness within the Special Flood Hazard Area and inundation areas where significant risk to socially vulnerable populations exist.		
Impact on Critical Facilities/Lifelines:	Dams are considered a critical facility. This action will create an understanding of the safety procedures in place for each identified dam.		
Impact on Capabilities	This action will improve planning and response capabilities through the understanding of responsibilities and procedures.		
Impact on Future Development:	Depending on the result of this partnership, future development near the dams may be provided with better protection from dam failure events due to improved procedures and communication, as well as any physical improvements to the structures		
Climate Change Considerations:	Climate change may result in an increase in the frequency and severity of weather-related disaster events, which may contribute to the likelihood of a dam failure event. This action will increase the capabilities to respond to these events.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No Action		Town will be unaware of any safety concerns for the dam or its condition
	Utilize information from NYSDEC		Owners may not be required to submit a safety plan to the State
	Utilize information from the National Inventory of Dams		Not all dams are listed on the inventory

Action 2024-RamapoT-05. Critical Facilities in the Floodplain

Action Name:	2024-RamapoT-05. Critical Facilities in the Floodplain		
Description of the Problem:	Critical facilities located in the floodplain are not only susceptible to flood damage but also create unnecessary complications for the municipality during an emergency event and post-disaster recovery. The Town does not have the authority to implement mitigation actions to all of these structures.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	

Description of the Solution:	<p>Coordinate with the facility managers at Sprint Wireless, AT&T Wireless, the Sewer Pump Station off Camp Hill Road and Scuffy Day Camp North Well, to support the mitigation of vulnerable structures via retrofit (e.g. elevation, flood-proofing) or relocation to protect structures from future damage.</p> <p>Phase 1: Identify most cost-effective mitigation option Phase 2: Work with facility manager to implement selected action based on available funding and local match ability.</p>		
Lead Agency:	Floodplain Administrator		
Supporting Agencies:	Town Administration, Facility Managers		
Estimated Cost:	High		
Potential Funding Sources:	FEMA BRIC, HMGP, Town Budget, Private Owners		
Implementation Timeline:	5 years		
Goals Met:	1, 2, 3		
Benefits:	This action will remove or reduce critical facility and community lifeline vulnerability to the flood hazard and remove or reduce safety risks for first responders.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR)	<input type="checkbox"/> Natural Systems Protection (NSP)	<input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input checked="" type="checkbox"/> Property Protection (PP)	<input checked="" type="checkbox"/> Structural Flood Control Projects (SP)
	<input type="checkbox"/> Preventative Measures (PR)	<input type="checkbox"/> Natural Resource Protection (NR)	<input type="checkbox"/> Emergency Services (ES)
	<input type="checkbox"/> Public Information (PI)		
Impact on Socially Vulnerable Populations:	Retrofitting or relocating the identified structures will benefit socially vulnerable populations, as individuals within these populations rely on resources from various government facilities, transportation facilities, and medical and senior care facilities.		
Impact on Critical Facilities/Lifelines:	Noting the number of facilities located within the flood hazard area may encourage the consideration of relocating critical facilities and lifelines from the flood hazard area and deter the development of any additional facilities in the flood hazard area.		
Impact on Capabilities	This action will enhance the Town’s current NFIP capabilities.		
Impact on Future Development:	Noting the number of facilities located within the flood hazard area may encourage the consideration of relocating critical facilities and lifelines from the flood hazard area and deter the development of any additional facilities in the flood hazard area.		
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events. As sea level rises due to climate change, the area of the flood hazard may expand.		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem continues
	Floodproof existing structures		May not necessarily reduce risk
	Construct floodwalls to stop flood issues		Will most likely interrupt natural floodplain function

Action 2024-RamapoT-06. Repetitive and Severe Repetitive Loss Properties

Action Name:	2024-RamapoT-06. Repetitive and Severe Repetitive Loss Properties		
Description of the Problem:	The Town does not have any Repetitive Loss or Severe Repetitive Loss properties, based on NFIP definitions. However, there are 40 Repetitive Loss properties based on the FMA definition of this term. These properties exhibit elevated vulnerability and may face increasing risks to flood damage due to changes in precipitation intensity and frequency, raising the possibility for these properties to become Repetitive/Severe Repetitive Loss Properties. These properties may require a disproportionate amount of municipal resources after hazard events if they are damaged.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The Town will promote and support non-structural flood hazard mitigation alternatives for at risk properties within the floodplain, including those that have been identified as Repetitive Loss (RL) and Severe Repetitive Loss (SRL), such as acquisition/relocation or elevation depending on feasibility. The parameters for this initiative would be funding, benefits versus cost, and willing participation of property owners.		
Lead Agency:	Floodplain Administrator		
Supporting Agencies:	Rockland County		
Estimated Cost:	Medium		
Potential Funding Sources:	FEMA FMA, FMA SWIFT, Town Budget, County Budget, Property Owners		
Implementation Timeline:	3 years		
Goals Met:	1, 2, 3		
Benefits:	This action would foster comprehensive floodplain management by removing at risk properties from the flood hazard area or elevating properties to reduce the flood risk.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	Socially vulnerable populations may be able to have houses elevated or acquired when it would otherwise be unaffordable.		
Impact on Critical Facilities/Lifelines:	Removing structures from the floodplain decreases the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.		
Impact on Capabilities	This action will enhance the Town’s current NFIP capabilities.		
Impact on Future Development:	Increased outreach to homeowners within a flood prone area will limit construction in areas that are prone to hazard events. Homes may be acquired, which will remove those structures from the floodplain and prevent future development on those sites.		
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low

Alternatives	Action	Evaluation
	No action	Current problem continues
	Construct flood walls/barriers around vulnerable areas	Costly and can divert floodwaters to other areas
	Deployable flood barriers for vulnerable areas	Requires a great deal of work to implement prior to each event

Action 2024-RamapoT-07. Substantial Damage Management Plan

Action Name:	2024-RamapoT-07. Substantial Damage Management Plan	
Description of the Problem:	<p>Officials in NFIP-participating communities are responsible for regulating all development in SFHAs by issuing permits and enforcing local floodplain requirements, including Substantial Damage, for the repairs of damaged buildings. After any disaster event, they must:</p> <ul style="list-style-type: none"> • Determine where the damage occurred within the community and if the damaged structures are in an SFHA. • Determine what to use for “market value” and cost to repair; uniformly applying regulations will protect against liability and promote equitable administration. • Determine if repairing plus improving the damaged structure equals or exceeds 50 percent of the structure’s pre-damage value. • Require permits for floodplain development. <p>The municipality does not have a Substantial Damage Management Plan in place, nor do they have a formal process in place when conducting substantial damage determinations. The municipality has substantial damage determination provisions in both the adopted NFIP ordinance and adopted building code, but staff are unaware of these provisions and do not leverage them.</p>	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	<p>The municipality will develop a Substantial Damage Management Plan, following the six-step planning process in 2021 Developing a Substantial Damage Management Plan (https://crsresources.org/files/500/developing_subst_damage_mgmt_plan.pdf). This plan will outline responsibilities for Substantial Damage determinations, determining market value, and permit approval processes following a disaster event.</p> <p>The municipality will also take part in workshops and training sessions offered by NYSDEC to train staff on the existing provisions in the NFIP ordinance and building code.</p>	
Lead Agency:	Floodplain Administrator	
Supporting Agencies:	Public Works, Office of Emergency Preparedness and Safety, Building Department	
Estimated Cost:	Low	
Potential Funding Sources:	Town Budget	
Implementation Timeline:	Within five years to develop the plan; ongoing to maintain and update the plan	
Goals Met:	1, 2, 5, 7	

Benefits:	This plan will provide a process in making Substantial Damage Determinations and allow the municipality to make these determinations and meet NFIP requirements more quickly.		
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	Substantially damaged structures are required to be rebuilt to be compliance with current codes. Socially vulnerable populations may not have the financial means to make these improvements. This action may allow for the identification of potential resources to address substantial damages to structures owned by socially vulnerable populations.		
Impact on Critical Facilities/Lifelines:	A Substantial Damage Management Plan would include all critical facilities and lifelines in the municipality.		
Impact on Capabilities	This action improves disaster recovery capabilities.		
Impact on Future Development:	A Substantial Damage Management Plan would include all existing, current, and future development in the municipality.		
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related disaster events. This action provides additional planning for disaster recovery.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No Action		-
	Rely on state or federal resources following disaster events		Resources may not be available during major widespread events
	Establish MOUs with outside agencies to conduct Substantial Damage Determinations		A plan outlining responsibilities is still necessary to prevent missing important requirements

Action 2024-RamapoT-08. Flood Mitigation Interest

Action Name:	2024-RamapoT-08. Flood Mitigation Interest		
Description of the Problem:	The Town does not have a formalized list of damaged properties or property owners which may be interested in flood mitigation measures, such as elevation or acquisition. Without this information, the Village does not have a streamlined way to assess overall trends in damages/impacts to these properties to determine properties of the highest risk of flood damage. It also does not track communications with property owners or the implementation or interest in potential mitigation efforts.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The Floodplain Administration will develop a list for inventorying system or properties damaged by flood events and property owners who are interested in flood mitigation measures, such as elevation or acquisition.		
Lead Agency:	Floodplain Administrator		

Supporting Agencies:	Planning Board, Zoning Board, Town Administration		
Estimated Cost:	Staff time, Low		
Potential Funding Sources:	Town Budget		
Implementation Timeline:	Within 2 years		
Goals Met:	1, 2, 3, 5		
Benefits:	Keeping a list of damaged properties and property owners interested in flood mitigation efforts may lead to the elimination of flood damage to homes and residences, which creating an open space for the municipality and increasing flood storage.		
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	Collecting data regarding homeowners that reside within flood prone areas provides an opportunity to introduce location-specific opportunities for assistance. Removing homes from the floodplain immediately removes the risk to life and property.		
Impact on Critical Facilities/Lifelines:	Removing structures from the floodplain decreases the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.		
Impact on Capabilities	This action will create a new Town capability, while enhancing its current NFIP capabilities.		
Impact on Future Development:	Increased outreach to homeowners within a flood prone area will limit construction in areas that are prone to hazard events. Homes may be acquired, which will remove those structures from the floodplain and prevent future development on those sites.		
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events. Areas experiencing flooding conditions may increase. Removing structures from the floodplain will reduce the response and recovery costs as a result of these events and decrease the loss of human life as a result of these events. Elevating structures will reduce the recovery costs as a result of these events.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem remains
	Only share opportunities when notified of grant funding		May not be enough time to garner interest or write application
	Wait for information from the State on flood-damaged properties		May be a delay in notice

Action 2024-RamapoT-09. Socially Vulnerable Populations Outreach

Action Name:	2024-RamapoT-09. Socially Vulnerable Populations Outreach	
Description of the Problem:	The Town does not have any organizations that conduct outreach to socially vulnerable populations and underserved populations. During hazard events, the public may need to quickly access information about evacuation routes and shelters, or other steps they can take to protect themselves and their property. Residents may also need information about what services are available or offline due to flooding from intense precipitation, dam failure, severe storms, and snow melt; where to receive a vaccination or other healthcare in the event of a disease outbreak; public cooling or heat centers, such as libraries, during extreme temperatures; and evacuation areas for earthquakes, landslides, and wildfires. Socially vulnerable and underserved populations may rely on these types of services more heavily than other segments on the population. Furthermore, they may be less able to access these resources due to a variety of potential obstacles, such as mobility issues or language barriers.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	Create outreach materials, or utilize those from Rockland County, on hazard risks for socially vulnerable populations. Methods of distribution may include Town events, the Town newsletters, social media, the Town website, and having the materials on display for the public at Town libraries and offices. Consider hiring staff to work directly with socially vulnerable populations.	
Lead Agency:	Town Administration	
Supporting Agencies:	Rockland County	
Estimated Cost:	Low	
Potential Funding Sources:	Town Budget, HMGP	
Implementation Timeline:	Within 3 years	
Goals Met:	1, 3, 5	
Benefits:	This action will ensure there is an individual working to identify and work with the socially vulnerable populations in the Town. Furthermore, this action will create opportunities to educate and inform populations on hazard risks.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Socially vulnerable populations in the Town will become educated on hazards risks. The Town will identify an individual to identify and work with these populations to ensure the most up to date information is being shared.	
Impact on Critical Facilities/Lifelines:	Educating populations on hazard risk and how to mitigate the risks can decrease the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.	
Impact on Capabilities	This action would build upon the Village’s already existing public education and outreach program.	

Impact on Future Development:	Not applicable		
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related disaster events. This action will inform residents and business owners of how to reduce risk from hazards and how climate change may exacerbate those risks.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current methods remain the only ones used
	Rely on state or federal resources		Resources may be generalized and not specific to the risks in the Town
	Use only a few methods for distribution		Using only a few methods of distribution may hinder socially vulnerable populations from receiving the guidance

Action 2024-RamapoT-10. Comprehensive Plan Update

Action Name:	2024-RamapoT-10. Comprehensive Plan Update		
Description of the Problem:	The current comprehensive plan does not incorporate hazard mitigation principles and does not have a strategy to streamline the consideration of the following hazards into its future development and growth: dam/levee failure, disease outbreak, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, or wildfire.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire	
Description of the Solution:	The Town will update its comprehensive plan. Ensure that the local comprehensive plan incorporates hazard mitigation techniques through a courtesy review or draft plans by the County Planning Department.		
Lead Agency:	Town Planner		
Supporting Agencies:	Town Administration, Town Planning Board, Rockland County		
Estimated Cost:	Staff time, Low		
Potential Funding Sources:	Town Budget		
Implementation Timeline:	Within five years		
Goals Met:	1, 2, 5, 6, 7		
Benefits:	This action will have the Town update its comprehensive plan, which has not been updated in many years. The integration of hazard mitigation principles will present the opportunity for the Town to identify areas of the Town which may be impacted by hazards and plan for future land use accordingly.		
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	

CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	The inclusion of hazard mitigation principles into the comprehensive plan may include discussions on how hazard risks may impact socially vulnerable populations in the Town.	
Impact on Critical Facilities/Lifelines:	Updating the comprehensive plan to include hazard mitigation principles may present an opportunity to discuss hazard risks to critical facilities and lifelines in the Town.	
Impact on Capabilities	This action will update an already existing planning capability of the Town, making it more resilient.	
Impact on Future Development:	This action will have a direct impact on future land use in the Town, as the comprehensive plan guides land use principles in the Town.	
Climate Change Considerations:	As impacts from climate change are increasingly felt, the contents in the Town’s comprehensive plan will need to be updated.	
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No action	Current problem remains
	Integrate hazard mitigation principles in only plan elements	The plan will miss integration opportunities in the comprehensive plan main document
	Integrate hazard mitigation principles in only comprehensive plan main document	The plan will miss integration opportunities in the plan elements

Action 2024-RamapoT-11. Spring Valley Culvert

Action Name:	2024-RamapoT-11. Spring Valley Culvert	
Description of the Problem:	There is an inadequately sized culvert in Spring Valley which contributes to flooding after severe storms.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Town Engineer will complete an engineering survey of culverts in Spring Valley that are undersized and contribute to flooding to determine the proper size necessary to provide stormwater capacity. The Town DPW will complete the necessary upsizing for those culverts noted to be undersized.	
Lead Agency:	Town Engineer	
Supporting Agencies:	Town Board, Highway Department	
Estimated Cost:	High	
Potential Funding Sources:	MS4 Grant, Town Budget, FEMA BRIC, HMGF	
Implementation Timeline:	Within 3 years	
Goals Met:	1, 2, 5	

Benefits:	Overall flooding will be reduced, which will result in less frequency of road closures and reduced damage occurring to culverts and roadways during severe events. Businesses are likely to remain in place if they are able to remain open, or re-open sooner following a flood.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR)	<input type="checkbox"/> Natural Systems Protection (NSP)	<input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Property Protection (PP)	<input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Areas that were previously vulnerable to frequency or severe flooding events will be less likely to be impacted by flooding events. Populations living in these areas will have fewer impacts due to flooding.		
Impact on Critical Facilities/Lifelines:	Transportation routes will be more likely to remain open, access to health and medical facilities will be maintained, both for healthcare workers and the population who requires treatment for injuries and illness, and stormwater management infrastructure will be better suited to handle flooding events.		
Impact on Capabilities	This action will upgrade the stormwater management capabilities of the Town.		
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.		
Climate Change Considerations:	Climate change is likely to result in more frequent and severe rainfall events. This action upsizes culvert sizes to meet changing stormwater needs as the result of climate change.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem remains
	Remove roadway		Roadway cannot be removed
	Raingardens		Raingardens are unlikely to be able to absorb enough stormwater to prevent flooding during severe rainfall events.

Action 2024-RamapoT-12. Flood Prone Roadways

Action Name:	2024-RamapoT-12. Flood Prone Roadways		
Description of the Problem:	The Town reports that there are several streets and roads that have recently been flood prone during heavy rains.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure	<input checked="" type="checkbox"/> Flood	<input type="checkbox"/> Landslide
	<input type="checkbox"/> Disease Outbreak	<input type="checkbox"/> Severe Storm	<input type="checkbox"/> Severe Winter Storm
	<input type="checkbox"/> Drought	<input type="checkbox"/> Wildfire	
	<input type="checkbox"/> Earthquake		
	<input type="checkbox"/> Extreme Temperature		
Description of the Solution:	The Town will identify which roadways are being impacted and develop specific mitigation solutions for flood prone road systems (roads, bridges, intersections, drainage, etc.) under the leadership of County DPW.		
Lead Agency:	Town Public Works		
Supporting Agencies:	County Public Works		

Estimated Cost:	Medium	
Potential Funding Sources:	FEMA BRIC, HMGP, Town Budget	
Implementation Timeline:	Within five years	
Goals Met:	2	
Benefits:	This action will identify measures to protect infrastructure in the transportation lifeline, which will lead to the assurance of clear roadways for evacuations, regular travel, and emergency responses.	
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	This action will assist socially vulnerable populations whose properties are impacted by flood prone roads.	
Impact on Critical Facilities/Lifelines:	This action will identify measures to protect infrastructure in the transportation lifeline, which will lead to the assurance of clear roadways for evacuations, regular travel, and emergency responses.	
Impact on Capabilities	Not applicable	
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.	
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events.	
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No action	Current problem continues
	Relocate all flood prone road systems	Not feasible
	Raise all flood prone roads	Cost prohibitive

Action 2024-RamapoT-13. Community Rating System (CRS) Program

Action Name:	2024-RamapoT-13. Community Rating System (CRS) Program	
Description of the Problem:	The Town is currently not in the CRS program. The CRS Program would incentivize the Village to implement activities and initiatives that reduce its risk to flood damage, while making residents eligible for flood insurance discounts.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire

Description of the Solution:	The Town will evaluate the benefits and costs of participating in CRS program. If feasible, the Town will join the program and begin implementing standards that exceed NFIP requirements.		
Lead Agency:	Floodplain Administrator		
Supporting Agencies:	Town Board, Planning, Office of Emergency Preparedness and Safety		
Estimated Cost:	Low		
Potential Funding Sources:	Town Budget		
Implementation Timeline:	2 years		
Goals Met:	2, 3, 5		
Benefits:	The participation in the CRS benefits communities by offering discounted rates for flood insurance premiums, which addresses the three goals of the program: reduce and avoid flood damage to insurable property, strengthen and support the insurance aspects of the National Flood Insurance Program, and foster comprehensive floodplain management.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR)	<input type="checkbox"/> Natural Systems Protection (NSP)	
	<input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input checked="" type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR)	<input type="checkbox"/> Natural Resource Protection (NR)	
	<input type="checkbox"/> Property Protection (PP)	<input type="checkbox"/> Structural Flood Control Projects (SP)	
	<input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	The participation in the Community Rating System (CRS) benefits communities by offering discounted rates for flood insurance premiums, which may be more affordable for some socially vulnerable populations.		
Impact on Critical Facilities/Lifelines:	Not applicable		
Impact on Capabilities	This action would enhance the Village’s floodplain management capabilities.		
Impact on Future Development:	Future development would need to adhere to any increased standards established as part of joining the CRS program such as increased freeboard and elevation certificate requirements.		
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events. These changes are likely to increase flood risks.		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		-
	Adopt aspects of the CRS program into the floodplain management program		Increased floodplain management capabilities but no reduction in flood insurance premiums
	Abandon any floodplain management practices not required by NFIP		Reduction in floodplain management capabilities and increase in risk.

Action 2024-RamapoT-14. Emergency Generators at Critical Facilities

Action Name:	2024-RamapoT-14. Emergency Generators at Critical Facilities	
Description of the Problem:	The Town does not have backup power at several pump stations and in the event of a power outage caused by a dam/levee failure, earthquake, extrem temperature event, flood, landslide, severe storm, severe winter storm, or wildfire, the pump stations will not function properly.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	Install permanently mounted generators at pump stations including Rodman Place, Longbow Road, Hawk Street, Sergio Court, and Bayard Lane. This project will help ensure the continued operations of the Town's Sanitary Sewer system during storm events involving power outages. Additionally, it will improve the Town's ability to respond to emergencies as the labor force and equipment will be available for assisting with other Town Emergency Protective Measures.	
Lead Agency:	Town Public Works	
Supporting Agencies:	Town Administration, Engineering, Office of Emergency Preparedness and Safety	
Estimated Cost:	High	
Potential Funding Sources:	FEMA HMPG, BRIC, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Town Budget	
Implementation Timeline:	5+ years	
Goals Met:	1, 2, 5	
Benefits:	The benefits of this action include reduced risk of flooding and resulting damage to facilities and less risk of interruption to potable water services. This action protects public health and safety and ensures continued operation of a critical facility and its essential functions during a power outage.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Vulnerable areas that may otherwise experience a loss of water during heavy rain or flooding will be more likely to retain services. Protection of critical facilities provides an opportunity for first responders, utility workers, and emergency managers to stage and deploy resources to vulnerable and hazard prone areas.	
Impact on Critical Facilities/Lifelines:	Hydration lifeline is more likely to remain intact.	
Impact on Capabilities	The action will increase the Town's capabilities during power outage events.	
Impact on Future Development:	Communities with sound and resilient infrastructure encourage commercial and residential development. This action results in protection of a critical facility that could support future development.	
Climate Change Considerations:	Climate change is likely to increase severe weather events such as flooding, wind, and extreme temperatures that result in power failures. This action accounts for a likely increase in power failure events. Consideration should be taken regarding the increase in heavy rain and flood events as a result of climate change.	

Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No Action		-
	Microgrid		Costly and difficult to implement.
	Solar panels and battery backup		Solar power is unlikely to be able to provide battery power for extended power failure events.

SECTION 9. JURISDICTIONAL ANNEXES

9.18 VILLAGE OF SLOATSBURG

This jurisdictional annex to the Rockland County Hazard Mitigation Plan (HMP) provides information to assist public and private sectors in the Village of Sloatsburg with reducing losses from future hazard events. This annex is not guidance of what to do when a disaster occurs; its focus is on actions that can be implemented prior to a disaster to reduce or eliminate damage to property and people. The annex presents a general overview of the Village of Sloatsburg, describes who participated in the planning process, assesses the Village’s risk, vulnerability, and capabilities, and outlines a strategy for achieving a more resilient community.

9.18.1 Hazard Mitigation Planning Team

The Village of Sloatsburg identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Village departments. The Deputy Clerk and Treasurer represented the community on the Rockland County HMP Planning Partnership and supported the local planning process requirements by securing input from persons with specific knowledge to enhance the plan. All departments were asked to contribute to the annex development through reviewing and contributing to the capability assessment, reporting on the status of previously identified actions, and participating in action identification and prioritization.

Table 9.18-1 summarizes Village officials who participated in the development of the annex and in what capacity. Additional documentation of the Village’s planning activities through Planning Partnership meetings is included in Volume 1.

Table 9.18-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Jessica Oms / Deputy Clerk and Treasurer Address: 96 Orange Turnpike, Sloatsburg, NY 10974 Phone Number: (845) 753-2727, ext. 204 Email: jessicaoms@sloatsburgny.com	Name/Title: George Thamsen / Building Inspector, Code Enforcement Officer, and Fire Inspector Address: 96 Orange Turnpike, Sloatsburg, NY 10974 Phone Number: (845) 753-2727, ext. 211 Email: Building@SloatsburgNY.com
National Flood Insurance Program Floodplain Administrator	
Name/Title: George Thamsen / Building Inspector, Code Enforcement Officer, and Fire Inspector Address: 96 Orange Turnpike, Sloatsburg, NY 10974 Phone Number: (845) 753-2727, ext. 211 Email: Building@SloatsburgNY.com	
Additional Contributors	
Name/Title: Eve M. Mancuso, P.E., C.M.E / Engineer Method of Participation: Reviewed Draft Annex, Completed NFIP Summary Form, Completed Capabilities	
Name/Title: George Thamsen / Building Inspector, Code Enforcement Officer, and Fire Inspector Method of Participation: Reviewed Draft Annex, Completed Building Permitting and Projected Development	
Name/Title: Jessica Oms / Deputy Clerk and Treasurer Method of Participation: Reviewed Draft Annex, Completed Building Permitting, Completed Capabilities, Identified Problem Areas	

9.18.2 Municipal Profile

The Village of Sloatsburg was incorporated in 1929 and is located along the western border of the Town of Ramapo in Rockland County (Rockland County 2018). It is bordered to the north, south and east by the Town of Ramapo and to the west by Orange County and New Jersey. The Village of Sloatsburg is bounded on the east by the Harriman State Park, on the west by the New Jersey State Park, to the south by the State of New Jersey and north to the Finger Lakes region (Village of Sloatsburg n.d.). It contains the Ramapo and Stony Brook Rivers and several lakes, including Mirror Lake and Pine Grove Lake. The Village is approximately 2.5 square miles in size and is primarily residential, consisting almost exclusively of single-family detached homes.

Research has shown that some populations are at greater risk from hazard events because of decreased resources or physical abilities. These populations can be more susceptible to hazard events based on a number of factors including their physical and financial ability to react or respond during a hazard, and the location and construction quality of their housing. Data from the 2017-2021 American Community Survey indicates that 6.6 percent of the population is 5 years of age or younger, 16.9 percent is 65 years of age or older, 2.2 percent is non-English speaking, 5.5 percent is below the poverty threshold, and 12.5 percent is considered disabled.

9.18.3 Jurisdictional Capability Assessment and Integration

The Village of Sloatsburg performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Volume I describes the components included in the capability assessment and their significance for hazard mitigation planning. The jurisdictional assessment for this annex includes analyses of the following:

- Planning and regulatory capabilities
- Development and permitting capabilities
- Administrative and technical capabilities
- Fiscal capabilities
- Education and outreach capabilities
- Classification under various community mitigation programs
- Adaptive capacity to withstand hazard events

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into day-to-day local government operations. As part of the hazard mitigation analysis, planning and /policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress toward plan integration. Development of an updated mitigation strategy provided an opportunity for the Village of Sloatsburg to identify opportunities for integration of mitigation concepts that can be incorporated into municipal procedures.

Planning, Legal, and Regulatory Capability and Integration

Table 9.18-2 summarizes the regulatory tools that are available to Village of Sloatsburg.

Table 9.18-2. Planning, Legal, and Regulatory Capability and Integration

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Codes, Ordinances, & Regulations				
Building Code	Yes	Local Law 1 of 2013 – Uniform Fire Prevention and Building Code	State, Local	Building Inspector/Code Enforcement Office and Fire Inspector
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> This local law provides for the administration and enforcement of the New York State Uniform Fire Prevention and Building Code and the State Energy Conservation Construction Code in the Village of Sloatsburg. All buildings, structures, and premises, regardless of use or occupancy are subject to the provisions of this local law. The Code Enforcement Officer is required to review any flood hazard certifications prior to the issuance of a Certificate of Occupancy or Certificate of Compliance.				
Zoning/Land Use Code	Yes	Chapter 54 Zoning	Local	Zoning Board of Appeals
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> This Zoning Local Law is created in accordance with, and as a means of effectuating, the Comprehensive Plan of the Village of Sloatsburg, New York. Its purpose is to protect and promote public health, safety, morals, comfort, convenience, prosperity, aesthetics, and the general welfare. The Zoning Local Law restricts/prohibits uses that are dangerous to health, safety, or property in times of flood or cause increased flood heights or velocities; requires that uses vulnerable to floods, including public facilities that serve such uses, be provided with flood protection at the time of initial construction; and protects individuals from buying lands that are unsuited for intended purposes because of flood hazards.				
Subdivision Code	Yes	Chapter 54 Zoning, Article IX Environmental Controls	Local	Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Planning Board may require an applicant to submit an application for cluster development where a property exhibits one or more of the following sensitive features. The application of the provisions of this section shall be guided by the important physical, cultural, and natural features of the particular property. Any subdivision in the 100-year floodplain must submit an application before the Planning Board.				
Site Plan Code	Yes	Chapter 54 Zoning, Article XV Site Plan Approval	Local	Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Site plan review provides the Planning Board with the opportunity to review development proposals before the issuance of a construction permit. The review process ensures that all elements in the proposed development will meet the requirements of this chapter and that the product will not adversely affect surrounding properties or cause problems on the site.				
Stormwater Management Code	Yes	Chapter 54 Zoning, Article IX Environmental Controls	Local	Village Engineer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The purpose of this section is to establish minimum stormwater management requirements and controls to protect and safeguard the general health, safety, and welfare of the Village's residents and property owners. The ordinance aims to minimize increases in stormwater runoff from land development activities in order to reduce flooding, among other objectives.				
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Real Estate Disclosure	Yes	New York State (NYS) mandate, Property Condition Disclosure Act, NY Code – Article 14 §460-467	State, Local	
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The NYS mandate requires sellers to disclose to potential buyers whether their property is located in a designated floodplain.				
Growth Management	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Environmental Protection Ordinance(s)	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Flood Damage Prevention Ordinance	Yes	Local Law No. 1 of 2014 – Flood Damage Prevention	Federal, State, Local	Building Inspector
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> It is the purpose of this local law to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas. The Building Inspector administers and implements this local law by granting or denying development permit applications in accordance with its provision. New construction and substantial improvements must be built with two feet freeboard.				
Wellhead Protection	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Emergency Management Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Climate Change Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other: Freeboard	Yes	-	State	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> New York State requires new one- and two-family residences to be built with two feet of freeboard and all other construction types with one foot of freeboard. The Flood Damage Prevention Ordinance exceeds this requirement by requiring all residential and non-residential new construction and substantial improvements to be built with two feet freeboard.				
Other: Cumulative Substantial Damage	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Planning Documents				
General/Comprehensive Plan	Yes	Village of Sloatsburg Comprehensive Plan (2007)	Local	Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Comprehensive Plan enables the Village to achieve its desired land use pattern and maintain its unique sense of community by guiding population growth and development in a manner that maintains the rural woodland character, broadening the Village’s tax base and employment opportunities, protecting the Village’s sensitive environmental features and preserve portions of the Village in its “open” natural state, providing safe, adequate, and efficient roadway network, providing essential infrastructure in existing higher density areas, continuing to provide and expand community facilities when necessary, preserving the Village’s cultural and historic resources, and protecting the visual quality of the Village’s natural environment.				
Capital Improvement Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Disaster Debris Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Floodplain Management or Watershed Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Stormwater Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Open Space Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Urban Water Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Habitat Conservation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Economic Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Community Wildfire Protection Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Community Forest Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Transportation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Agriculture Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Climate Action/ Resiliency/Sustainability Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Tourism Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Business/ Downtown Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Other (for example NYRCR, etc.)	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Response/Recovery Planning				
Comprehensive Emergency Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Continuity of Operations Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Substantial Damage Response Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Threat & Hazard Identification & Risk Assessment	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Post-Disaster Recovery Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Public Health Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

Development and Permitting Capability

Table 9.18-3 summarizes the capabilities of Village of Sloatsburg to oversee and track development.

Table 9.18-3. Development and Permitting Capability

Indicate if your jurisdiction implements the following	Yes/No	Comment:
Do you issue development permits? <ul style="list-style-type: none"> If you issue development permits, what department is responsible? If you do not issue development permits, what is your process for tracking new development? 	Yes	The Building Department issues development permits
Are permits tracked by hazard area? (For example, floodplain development permits.)	Yes	Yes, by floodplain development
Do you have a buildable land inventory? <ul style="list-style-type: none"> If you have a buildable land inventory, please describe 	No	-

Indicate if your jurisdiction implements the following	Yes/No	Comment:
Describe the level of build-out in your jurisdiction.	N/A	The Village is primarily residential area with areas of mixed use along Route 17. Non-residential use is limited to the industrial park along Sterling Mine Road, and a small portion along Route 17. There is space for additional development in the Open Space Residential zone. According to the 2007 Comprehensive Plan, approximately 55 percent of the Village is either vacant land, parkland, or open space; Approximately 24 percent of Sloatsburg’s land area is residential, while 17 percent of the land area is in transportation/utility use; Local commercial (2%), office/industrial (2%), and community services/government (1%) are minor land use categories in the community.

Administrative and Technical Capability

Table 9.18-4 summarizes potential staff and personnel resources available to Village of Sloatsburg and their current responsibilities that contribute to hazard mitigation.

Table 9.18-4. Administrative and Technical Capabilities

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
<i>Administrative Capability</i>		
Planning Board	Yes	The Village Planning Board consists of 7 members with 2 alternates and is supported by the Village Attorney and Engineer.
Zoning Board of Adjustment	Yes	The Village Zoning Board of appeals consists of 5 members with 1 alternate and is supported by the Village Attorney and Engineer.
Planning Department	No	-
Mitigation Planning Committee	No	-
Environmental Board/Commission	No	-
Open Space Board/Committee	No	-
Economic Development Commission/Committee	No	-
Public Works/Highway Department	Yes	The Highway Department is responsible for the maintenance and upkeep of all the Village roads, public facilities and snowplowing services.
Construction/Building/Code Enforcement Department	Yes	The Building Department is responsible for building permit issuance, code violations, and fire inspections.
Emergency Management/Public Safety Department	Yes	The Fire Department is a fully volunteer-run department that is responsible to respond to emergency calls related to fires, fire alarms, vehicle accidents and extrications, brush fires, and hazardous materials incidents.
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	No	-
Mutual aid agreements	Yes	Stormwater Consortium of Rockland County
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	No	-
Other	No	-

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
<i>Technical/Staffing Capability</i>		
Planners or engineers with knowledge of land development and land management practices	Yes	Village Engineer
Engineers or professionals trained in building or infrastructure construction practices	Yes	Village Engineer
Planners or engineers with an understanding of natural hazards	No	-
Staff with expertise or training in benefit/cost analysis	No	-
Professionals trained in conducting damage assessments	No	-
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	No	-
Environmental scientist familiar with natural hazards	No	-
Surveyor(s)	No	-
Emergency Manager	No	-
Grant writer(s)	No	-
Resilience Officer	No	-
Other (this could include stormwater engineer, environmental specialist, etc.)	No	-

Fiscal Capability

Table 9.18-5 summarizes financial resources available to Village of Sloatsburg.

Table 9.18-5. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use? (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	Yes – Village Board
Capital improvements project funding	Yes – Village Board
Authority to levy taxes for specific purposes	Yes – Village Board
User fees for water, sewer, gas, or electric service	No
Impact fees for homebuyers or developers of new development/homes	Yes – Village Board
Stormwater utility fee	No
Incur debt through general obligation bonds	Yes – Village Board
Incur debt through special tax bonds	N/A
Incur debt through private activity bonds	N/A
Withhold public expenditures in hazard-prone areas	Yes – Village Board
Other federal or state Funding Programs	Yes – Consolidated Local Street and Highway Improvement Program (CHIP) through NYSDOT
Open Space Acquisition funding programs	Yes – Village Board
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	No

Education and Outreach Capability

Table 9.18-6 summarizes the education and outreach resources available to Village of Sloatsburg.

Table 9.18-6. Education and Outreach Capabilities

Outreach Resources	Available? (Yes/No)	Comment:
Public information officer or communications office	No	-
Personnel skilled or trained in website development	Yes	Contracted
Hazard mitigation information available on your website	Yes	The Village uses their municipal website, flyers, etc. to inform citizens on natural hazards within the municipality.
Social media for hazard mitigation education and outreach	Yes	The Village has a Facebook page which can be used for hazard mitigation education and outreach.
Citizen boards or commissions that address issues related to hazard mitigation	No	-
Warning systems for hazard events	Yes	The County utilizes NY-Alert and CodeRed (the backup to NY-Alert) for emergency notifications (all Towns and Villages have access to it).
Natural disaster/safety programs in place for schools	No	-
Organizations that conduct outreach to socially vulnerable populations and underserved populations		
Public outreach mechanisms / programs to inform citizens on natural hazards, risk, and ways to protect themselves during such events	No	-
If yes, please describe.	N/A	-

Community Classifications

Table 9.18-7 summarizes classifications for community programs available to Village of Sloatsburg.

Table 9.18-7. Community Classifications

Program	Participating? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	No	-	-
New York State Department of Environmental Conservation (NYSDEC) Climate Smart Community	No	-	-
National Weather Service Storm Ready Certification	No	-	-
Firewise Communities classification	No	-	-
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable

— = Unavailable

Adaptive Capacity

Adaptive capacity is defined as “the ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or respond to consequences” (IPCC 2022). Each jurisdiction has a unique combination of capabilities to adjust to, protect from, and withstand a future hazard event, future conditions, and changing risk. Table 9.18-8 summarizes the adaptive capacity for each identified hazard of concern and the Village’s capability to address related actions using the following classifications:

- Strong: Capacity exists and is in use.
- Moderate: Capacity might exist; but is not used or could use some improvement.
- Weak: Capacity does not exist or could use substantial improvement.

Table 9.18-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Disease Outbreak	Moderate
Drought	Moderate
Earthquake	Moderate
Extreme Temperature	Moderate
Flood	Moderate
Landslide	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

9.18.4 National Flood Insurance Program Compliance

This section provides specific information on the management and regulation of the regulatory floodplain, including current and future compliance with the National Flood Insurance Program (NFIP). The floodplain administrator listed in Table 9.18-1 is responsible for maintaining this information.

NFIP Summary

Table 9.18-9 summarizes the NFIP statistics for Village of Sloatsburg.

Table 9.18-9. Village of Sloatsburg NFIP Summary of Policy and Claim Statistics

# Policies	25
# Claims (Losses)	58
Total Loss Payments	\$595,914
# Repetitive Loss Properties (NFIP definition)	1
# Repetitive Loss Properties (FMA definition)	8
# Severe Repetitive Loss Properties	1
# Policies Within the 1% Annual Chance Flood Boundary	1

NFIP Definition of Repetitive Loss: The NFIP defines a repetitive loss property as any insurable building for which two or more claims of more than \$1,000 were paid by the NFIP within any rolling 10-year period since 1978.

FMA Definition of Repetitive Loss: FEMA’s Flood Mitigation Assistance (FMA) program defines a repetitive loss property as any insurable building that has incurred flood-related damage on two occasions, in which the cost of the repair, on average, equaled or exceeded 25 percent of the market value of the structure at the time of each such flood event.

Definition of Severe Repetitive Loss: A residential property covered under an NFIP flood insurance policy and: (a) That has at least four NFIP claim payments over \$5,000 each, and the cumulative amount of such claims payments exceeds \$20,000; or (b) For which at least two separate claims payments have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building. At least two of the claims must have occurred within any 10-year period, more than 10 days apart.

Source: FEMA, December 2023

Note: RL count may include properties also identified as SRL.

Flood Vulnerability Summary

Table 9.18-10 provides a summary of the NFIP program in Village of Sloatsburg.

Table 9.18-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	Flooding at Nacoma Brook – properties abutting the Brook
Do you maintain a list of properties that have been damaged by flooding?	No list is maintained
Do you maintain a list of property owners interested in flood mitigation?	No list is maintained
How many homeowners and/or business owners are interested in mitigation (elevation or acquisition)?	Unknown
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what projects are underway.	No
How do you make Substantial Damage determinations?	N/A
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	N/A*
How many properties have been mitigated (elevation or acquisition) in your jurisdiction? • If there are mitigation properties, how were the projects funded?	None
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If not, state why.	Yes

NFIP Topic	Comments
NFIP Compliance	
What local department is responsible for floodplain management?	The Sloatsburg Village Engineer and the Village Building Inspector.
Are any certified floodplain managers on staff in your jurisdiction?	No
Do you have access to resources to determine possible future flooding conditions from climate change?	No
Does your floodplain management staff need any assistance or training to support its floodplain management program? <ul style="list-style-type: none"> If so, what type of assistance/training is needed? 	No
Provide an explanation of NFIP administration services you provide (e.g., permit review, GIS, education/outreach, inspections, engineering capability)	Permit Reviews. The Department of Works does routine inspections and maintains of all catch basins and Village owned areas prone to water damage.
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	NYS Building Code
What are the barriers to running an effective NFIP program in the community, if any?	Staffing
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? <ul style="list-style-type: none"> If so, state the violations. 	No
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	June 5, 2019
What is the local law number or municipal code of your flood damage prevention ordinance?	Local Law 1
What is the date that your flood damage prevention ordinance was last amended?	2014
Does your floodplain management program meet or exceed minimum requirements? <ul style="list-style-type: none"> If exceeds, in what ways? 	The Village meets the Flood Plain Management minimum requirements.
Are there other local ordinances, plans or programs (e.g., site plan review) that support floodplain management and meeting the NFIP requirements? For instance, does the planning board or zoning board consider efforts to reduce flood risk when reviewing variances such as height restrictions?	Yes
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	No

*Note: *The Village reported it does not have a process to make substantial damage determinations; however, during this planning process, it was confirmed that substantial damage determination provisions are established in both the adopted NFIP ordinance and adopted building code. This response has not been changed to accurately reflect the tools leveraged by the Village to mitigate risks.*

9.18.5 Growth/Development Trends

Understanding how past, current, and projected development patterns have or are likely to increase or decrease risk in hazard areas is a key component to appreciating a jurisdiction’s overall risk to its hazards of concern. Recent and expected future development trends, including major residential/commercial development and major infrastructure development, are summarized in Table 9.18-11 through Table 9.18-13.

Table 9.18-11. Number of Building Permits for New Construction Issued Since the Previous HMP

	New Construction Permits Issued			Total
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	
2018				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2019				
Total Permits	0	0	1	1
Permits within SFHA	0	0	0	0
2020				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2021				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2022				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0

SFHA = Special Flood Hazard Area (1% flood event)

Table 9.18-12. Recent Major Development and Infrastructure from 2018 to Present

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
Valley Rock	Mixed Use	Multiple	38.44-1-11	N/A	Complete

* Only location-specific hazard zones or vulnerabilities identified.

Table 9.18-13. Known or Anticipated Major Development and Infrastructure in the Next Five Years

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
Wintergreen Subdivision	Residential	-	-	N/A	Planning/ Zoning
Stewart Farm	Residential	-	38.50-1-14	N/A	Planning/ Zoning
Aspen Road Subdivision	Residential	-	39.30-1-4	N/A	Planning/ Zoning
Oak Brook Center	Commercial	-	38.52-1-10,11,12,3,14,15	N/A	Planning/ Zoning

* Only location-specific hazard zones or vulnerabilities identified.

9.18.6 Jurisdictional Risk Assessment

The hazard profiles in Volume I provide detailed information regarding each planning partner’s vulnerability to the identified hazards, including summaries of the Village of Sloatsburg risk assessment results and data used to determine the hazard ranking. Key local risk assessment information is presented below.

Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Village are shown in Figure 9.18-1 through Figure 9.18-2. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps are provided only for hazards that can be identified clearly using mapping techniques and technologies and for which Sloatsburg has significant exposure. The maps show the location of potential new development, where available.

Figure 9.18-1. Village of Sloatsburg Flood and Dam Inundation Hazard Area Extent and Location

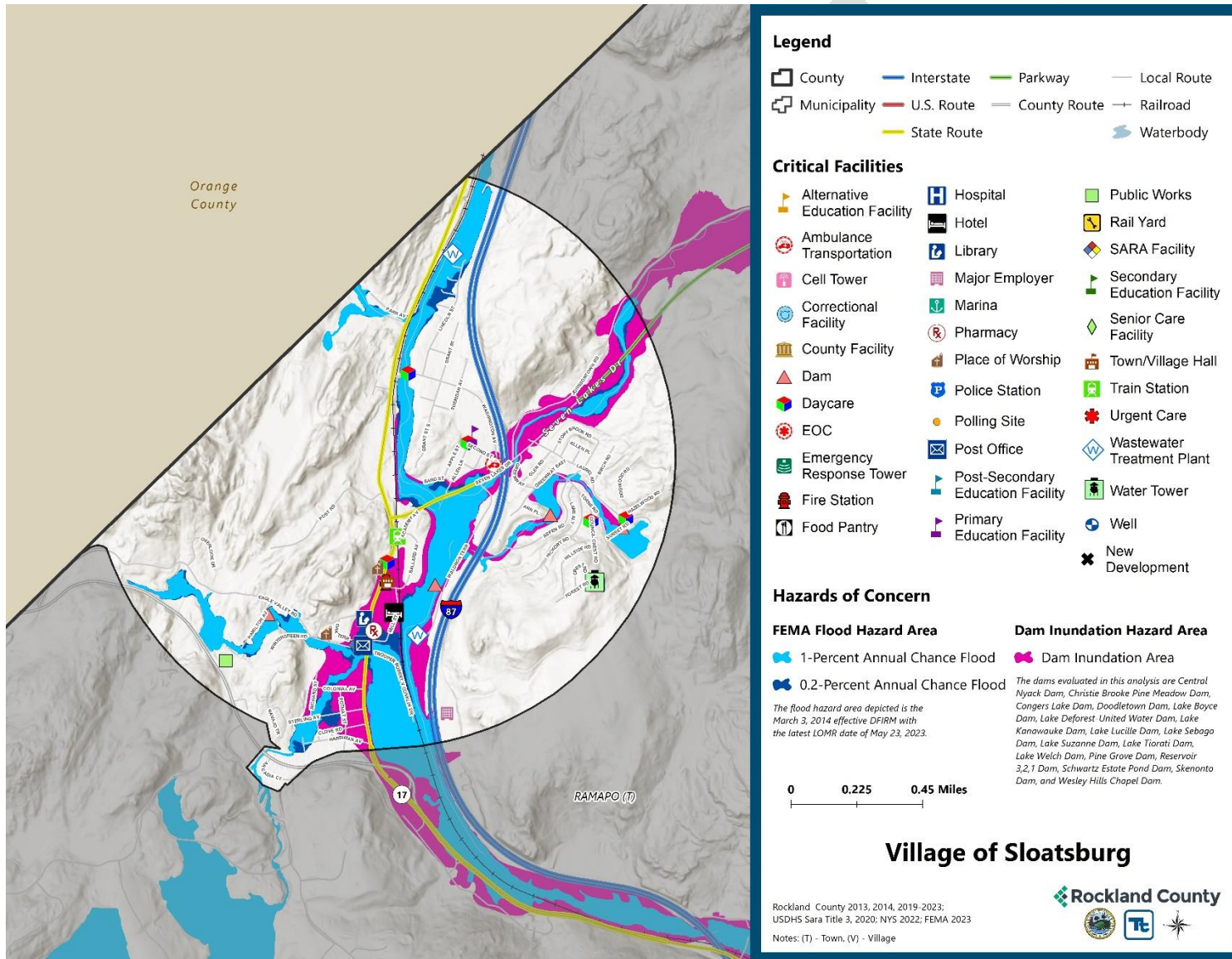
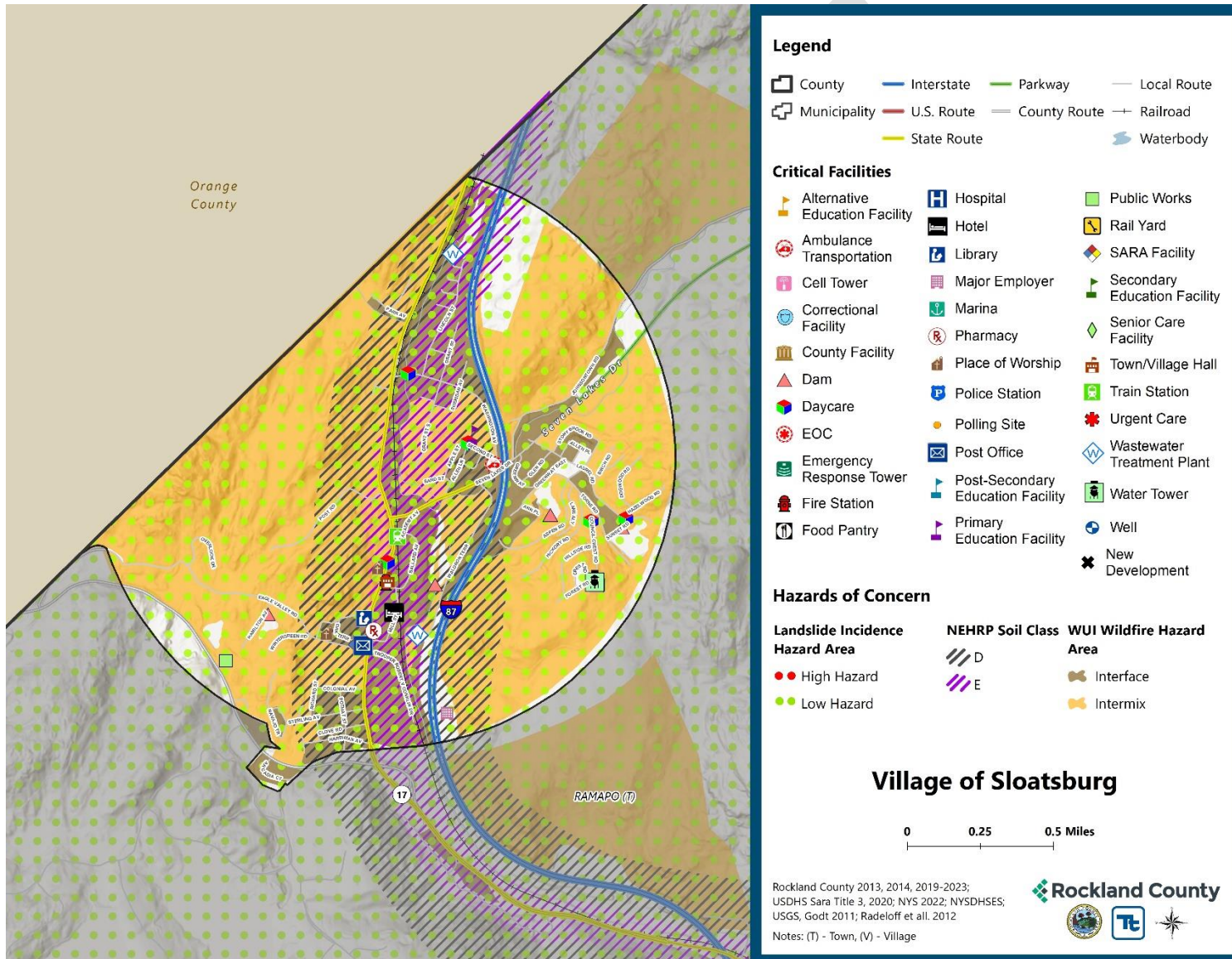


Figure 9.18-2. Village of Sloatsburg Landslide, Earthquake, and Wildfire Hazard Area Extent and Location



Hazard Event History

The history of natural and non-natural hazard events in the Village of Sloatsburg is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 9.18-14 provides details on loss and damage in the Village during hazard events since the last hazard mitigation plan update.

Table 9.18-14. Hazard Event History in the Village of Sloatsburg

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Summary of Damage and Losses in the Village
Jan 20, 2020 - May 11, 2023	New York Covid-19 (3434-EM-NY, 4480-DR-NY)	Yes	The Covid-19 pandemic resulted in nationwide shutdowns, social distancing and masking requirements, and immunization efforts. Since the start of the pandemic, roughly 950 deaths have been reported in Rockland County. The federal Public Health Emergency expired in May 2023 but illness continues to occur as the virus shifts to becoming endemic.	Between 3/2020 and 3/2023 the Village underwent changes in order to accommodate the safety protocols and procedures sent in place by the State. During the shutdown went worked on skeleton shifts in order to minimize exposure, the Village facilities with access to the public were sanitized on a regular basis, barriers were added to human contact areas, six-foot markers were place on the floors and hand sanitizing stations were added throughout the Village offices.
April 13, 2020	High Wind	No	High winds across the county led to downed trees power outages, closed roads, and approximately \$200,000 in property damage.	Fallen trees.
August 4, 2020	New York Tropical Storm Isaias (4567-DR-NY)	Yes	The center of Isaias passed about 65 miles west of New York City at 3 pm on August 4, 2020. Tropical storm force winds extended well east of the center of circulation. In addition, 1 to 3 inches of rainfall, highest west, were recorded across the county. These types of winds and rainfall across the area resulted in numerous trees and tree limbs being downed, power outages, damages to homes and automobiles, and disruption to transit.	Tropical storm Isaias left the streets covered in debris from fallen trees and branches twigs rocks. the debris. the Sloatsburg DPW collected the debris converted it into a 75-yard wood chip pile which was located at the Sloatsburg Community Fields Isais - 148.50 hours of overtime for 4 days of debris removal by the DPW team

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Summary of Damage and Losses in the Village
September 1-3, 2021	New York Remnants of Hurricane Ida (3572-EM-NY, 4615-DR-NY)	Yes	Extremely heavy rainfall associated with the remnants of Hurricane Ida overspread southeast New York during the evening of September 1 and continued through the early morning hours of September 2. Rainfall totals ranged from 5-8 inches across much of the region, with much of that rain falling in just a few hours. This resulted in widespread catastrophic flash flooding.	Hurricane Ida caused severe flooding at the community fields and at our Brook Street Park- 540 SF of rubber surfacing at the Sloatsburg Park had to be removed & replaced, walkways were compromised, a couple of trees needed to be removed and chipped, the pool area had water damage, picnic tables and trash receptacles were damaged to the point they required replacement. The Sloatsburg Fire Department was dispatched to numerous locations on Route 17 to assist people who were left stranded in their vehicles due to flooding. 60 regular hours - 19 Overtime hours in debris removal- 2 Ice Commander Rescue Suits were damaged after responding to water rescue calls from people trapped in vehicles.

EM = Emergency Declaration (FEMA)
 FEMA = Federal Emergency Management Agency
 DR = Major Disaster Declaration (FEMA)
 N/A = Not applicable

Hazard Ranking and Vulnerabilities

The hazard profiles in Volume 1 have detailed information regarding each planning partner’s vulnerability to the identified hazards. The following summarizes presents key risk assessment results for the Village of Sloatsburg.

Hazard Ranking

The participating jurisdictions have differing degrees of vulnerability to the hazards of concern, so each jurisdiction ranked its own degree of risk to each hazard. The community-specific hazard ranking is based on problems and impacts identified by the risk assessment presented in Volume I. The ranking process involves an assessment of the likelihood of occurrence for each hazard; the potential impacts of the hazard on people, property, and the economy; community capabilities to address the hazard; and changing future climate conditions. Sloatsburg reviewed the County hazard ranking and individual results to assess the relative risk of the hazards of concern to the community. During the review of the hazard ranking, the Village indicated the following:

- During the review of the hazard/vulnerability risk ranking, the Village indicated the rankings were accurate.

Table 9.18-15 shows Sloatsburg’s final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 9.18-15. Hazard Ranking

Hazard	Rank
Dam Failure	High
Disease Outbreak	Medium
Drought	Medium
Earthquake	Medium
Extreme Temperature	Medium
Flood	Medium
Landslide	Low
Severe Weather	High
Severe Winter Weather	High
Wildfire	Medium

Note: The scale is based on the hazard rankings established in Volume I, modified as appropriate based on review by the jurisdiction

Critical Facilities

Table 9.18-16 identifies critical facilities in the community located in the 1 percent and 0.2 percent annual chance floodplains.

Table 9.18-16. Critical Facilities Flood Vulnerability

Name	Type	Exposure		Addressed by Proposed Action	Already Protected to 0.2% Flood Level (describe protections)
		1% Event	0.2% Event		
NYS Thruway - Sloatsburg/Ramapo Service Area	Wastewater Treatment Plant	Yes	Yes	2024-SloatsburgV-09	No
Sloatsburg Wastewater Treatment Plant	Wastewater Treatment Plant	Yes	Yes	2024-SloatsburgV-09	No
Conti Pond Dam	Dam	Yes	Yes	2024-SloatsburgV-11	No
Pine Grove Lake Dam	Dam	Yes	Yes	2024-SloatsburgV-11	No
Ramapo River Dam	Dam	Yes	Yes	2024-SloatsburgV-11	No
N.S.C.I.C. Early Head Start	Daycare	Yes	Yes	2024-SloatsburgV-09	No

Source: Rockland County 2023, FEMA

In addition to critical facilities that are exposed to flooding, the following high hazard dams are located in or could impact Village of Sloatsburg:

- Pine Grove Lake Dam – Association of Property Owners at Pine Grove
- Lake Sebago Dam – New York Office of Parks, Recreation and Historic Preservation, Palisades Interstate Park Commission

Identified Issues

After review of the Village of Sloatsburg’s hazard event history, hazard rankings, hazard location, and current capabilities, the Village of Sloatsburg identified the following vulnerabilities within their community:

- There is a lack of drainage along Hamilton Avenue and Liberty Rock Road, causing flooding during heavy rains and severe storms.
- The current comprehensive plan does not incorporate natural hazards.
- Flood prone roads can inhibit emergency response and evacuation during a flood.
- The current emergency response plan does not include the functional-needs registry.
- The Village currently does not have a comprehensive education and outreach program. There is a need to educate residents and businesses about storm mitigation, preparation, response, and recovery.
- Repetitively flooded properties place an undue stress on the property owner and village and efforts should be made to mitigate them. Properties abutting the Nacoma Brook have been identified as experiencing flooding impacts.
- Some facilities were built before code updates; therefore, they may be more susceptible to damage from a hazard event.
- Some of the Village staff are not adequately trained to enforce NFIP regulations and/or floodplain management ordinances. Floodplain management and ordinance enforcement staff are not Certified Floodplain Managers.
- Critical facilities located in the floodplain are not only susceptible to flood damage but also create unnecessary complications for the municipality during an emergency event and post-disaster recovery.
- The municipality does not have a Substantial Damage Management Plan in place, nor do they have a standard process in place when conducting substantial damage determinations. The Village has substantial damage determination provisions in both the adopted NFIP ordinance and adopted building code, but staff are unaware of these provisions and do not leverage them.
- There are multiple dams, which are critical infrastructures, located in the 1- and 0.2-percent flood hazard areas. The Village also has potential impacts from high-hazard potential dams, the Pine Grove Dam and Lake Sebago Dam. These structures have the potential to impact those living nearby.

**This issue was identified as a specific area of concern based on resident response to the Rockland County Hazard Mitigation Citizen survey.*

9.18.7 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and prioritizes actions to address over the next five years.

Past Mitigation Initiative Status

Table 9.18-17 indicates progress on the Village's mitigation strategy identified in the 2019 HMP. Actions that are still recommended but not completed or that are in progress are carried forward and combined with new actions as part of the mitigation strategy for this plan update. Previous actions that are now ongoing programs and capabilities are indicated as such and are presented in the capability assessment earlier in this annex.

Additional Mitigation Efforts

In addition to the mitigation initiatives completed in Table 9.18-17, Village of Sloatsburg did not identify any mitigation efforts completed since the last HMP.

Table 9.18-17. Status of Previous Mitigation Actions

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Sloatsburg-1	Bank Stabilization	Flood	Village Board	Properties are subject to flooding and damages. Bank stabilization and flooding mitigation of adjacent private properties.	1. Completed 2. Project along Nakoma Brook and Brook Street Park completed. The Brook Street Park culvert has been replaced.	1. Discontinue 2. N/A 3. Completed
V. Sloatsburg-2	Hamilton Avenue Drainage	Flood	Village Board	No drainage along Hamilton Avenue. Control flooding along Hamilton Avenue which has no drainage presently.	1. No Progress 2. Focus has shifted to other areas that require drainage improvements.	1. Include 2. N/A 3. N/A
V. Sloatsburg-3	Liberty Rock Road Drainage	Severe Storm, Flood	Village Board	Lack of drainage at library on Liberty Rock Road. Flows from Liberty Rock Road - lack of drainage at library causes water to run beneath structure.	1. In Progress 2. Seeking to obtain a study to identify potential methods for drainage.	1. Include 2. N/A 3. N/A
V. Sloatsburg-4	Comprehensive Plan Update	All Hazards	Village, Rockland County Planning	Current comprehensive plan does not incorporate natural hazards. Ensure that local comprehensive plans incorporate natural disaster mitigation techniques through a courtesy review or draft plans by the County Planning Department.	1. No Progress 2. Comprehensive plans have not been updated yet to incorporate natural hazards.	1. Include 2. N/A 3. N/A

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Sloatsburg-5	Public Workshops	All Hazards	Village	Current zoning and planning issues need to incorporate natural hazards and hazard mitigation. Hold periodic workshops regarding zoning and planning issues that arise regarding natural hazards and hazard mitigation.	1. No Progress / Discontinue 2. Discussions on natural hazards occur during planning and zoning meetings as cases are heard.	1. Discontinue 2. N/A 3. Discussions on natural hazards occur during planning and zoning meetings as cases are heard.
V. Sloatsburg-6	Floodplain Management Best Practices	Flood	Village	Best management practices need to stay up to date to ensure properties are protected in the floodplain areas. Continue to implement best management practices for floodplain areas.	1. Ongoing Capability / Discontinue 2. Ongoing efforts to continuously implement best management practices for floodplain areas.	1. Discontinue 2. N/A 3. This is a maintenance action.
V. Sloatsburg-7	Maintain List of Repetitive Flood Property	Flood	Village	Repetitively flooded properties place an undue stress on the property owner and village and efforts should be made to mitigate them. Identify and document repetitively flooded properties. Work with owners to explore mitigation opportunities for repetitively flooded properties, and if appropriate and feasible, carry out acquisition, relocation, elevation and floodproofing measures to protect these properties.	1. In Progress 2. There are current efforts identify and document repetitively flooded properties.	1. Include 2. N/A 3. N/A

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Sloatsburg-8	Flood Prone Road Mitigation Measures	Flood	Village DPW, Rockland County	Flood prone roads can inhibit emergency response and evacuation during a flood. Develop specific mitigation solutions for flood prone road systems (roads, bridges, intersections, drainage, etc.) under the leadership of County DPW.	1. In Progress 2. Conceptual plans have been developed to mitigate stormwater flooding by extending the stormwater conveyance system.	1. Include 2. N/A 3. N/A
V. Sloatsburg-9	Critical Facilities Protection	All Hazards	Village	Some facilities were built before code updates; therefore, they may be more susceptible to damage from a hazard event. Determine the year built and level of protection for critical emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide some degree of protection from natural hazards and pursue potential mitigation opportunities to protect these sites as funding becomes available.	1. Ongoing Capability / Discontinue 2. Continued efforts to provide protection to critical emergency facilities and shelters, including applying for grants.	1. Discontinue 2. N/A 3. Continuous action which will be implemented annually.

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Sloatsburg-10	Update Emergency Response Plan	All Hazards	Village, Rockland County	<p>The current emergency response plan does not include the functional-needs registry.</p> <p>Work with Rockland County to obtain access to the functional-needs registry to use as part of the Village’s emergency response plan.</p>	<p>1. In Progress</p> <p>2. Communications with the County have been made, but incorporating the registry into the Village’s emergency response plan must still be performed.</p>	<p>1. Include</p> <p>2. Update the Village’s emergency response plan by utilizing the functional-needs registry which was obtained from Rockland County.</p> <p>3. N/A</p>
V. Sloatsburg-11	Public Awareness Program	All Hazards	Village, Rockland County	<p>The Village currently does not have a comprehensive education and outreach program. There is a need to educate residents about storm preparation, response, and recovery.</p> <p>Develop and enhance the public awareness program on hazards, prevention, and mitigation. Continue to work with Rockland County on their program that provides information to the municipalities.</p>	<p>1. In Progress</p> <p>2. Producing the materials for outreach has been an obstacle.</p>	<p>1. Include</p> <p>2. N/A</p> <p>3. N/A</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Sloatsburg-12	Update Village Codes	All Hazards	Village	Some facilities were built before code updates; therefore, they may be more susceptible to damage from a hazard event. Code update: review existing local codes and ordinances against the identified hazards to determine whether there needs to be any amendments to address identified hazards and, where a need is identified; modify/amend the codes/ordinances as applicable.	1. No Progress 2. Need to review codes and ordinances	1. Include 2. N/A 3. N/A
V. Sloatsburg-13	Code Enforcement	All Hazards	Village	Some facilities were built before code updates; therefore, they may be more susceptible to damage from a hazard event. Continue enforcement of NYS and local building codes	1. Ongoing Capability / Discontinue 2. This action is a requirement of the Village and must be performed nonetheless.	1. Discontinue 2. N/A 3. This action is a requirement of the Village and must be performed nonetheless.
V. Sloatsburg-14	Flood Damage Prevention Ordinance Update, FEMA Regulations	Flood	Village	Some facilities were built before code updates; therefore, they may be more susceptible to damage from a hazard event. Update/revise floodplain management ordinance to comply with latest FEMA regulations.	1. In Progress 2. Ordinances are being reviewed.	1. Include 2. N/A 3. N/A

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Sloatsburg-15	NFIP Capabilities	Flood	Village	Some of the Village staff are not adequately trained to enforce NFIP regulations and/or floodplain management ordinances. Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances.	1. In Progress 2. Training opportunities are not widely available and staff responsibilities interfere with available trainings	1. Include 2. N/A 3. N/A
V. Sloatsburg-16	Flood Damage Prevention Ordinance Update, FIRMs	Flood	Village	Some facilities were built before code updates; therefore, they may be more susceptible to damage from a hazard event. Update/review floodplain management ordinances to be consistent with potential future new FIRMs.	1. In Progress 2. Ordinances are being reviewed.	1. Include 2. Combine with Action V.-Sloatsburg-14 3. N/A
V. Sloatsburg-17	Certified Floodplain Managers	Flood	Village	Floodplain management and ordinance enforcement staff are not Certified Floodplain Managers. Require staff involved in floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs).	1. No Progress 2. Staff responsibilities interfere with available trainings	1. Include 2. Combine with Action V. Sloatsburg-15 3. N/A
V. Sloatsburg-18	Community Rating System	Flood	Village	The Village is not in the CRS program. Consider joining the Community Rating System (CRS).	1. No Progress / Discontinue 2. The Village is not interested in participating in the CRS Program.	1. Discontinue 2. N/A 3. The Village is not interested in participating in the CRS Program.

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Sloatsburg-19	Privately Owned Critical Facilities in Floodplain	Flood	Property Owners with Village Support	<p>Critical facilities located in the floodplain are not only susceptible to flood damage but also create unnecessary complications for the municipality during an emergency event and post-disaster recovery.</p> <p>The Village does not have jurisdiction over these facilities to mitigate. The Village will notify the facility manager/operator to evaluate advise of potential mitigation alternatives to consider, potential funding sources for implementation and that NYS requires that any mitigation addresses the 500-year flood event or “worst damage scenario”.</p>	<p>1. No Progress / Discontinue 2. The NYS Thruway maintains its own facilities</p>	<p>1. Discontinue 2. N/A 3. The NYS Thruway maintains its own facilities.</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Sloatsburg-20	Publicly Owned Critical Facility in the Floodplain	Flood	Village Board	<p>Critical facilities located in the floodplain are not only susceptible to flood damage but also create unnecessary complications for the municipality during an emergency event and post-disaster recovery.</p> <p>Sloatsburg Wastewater Treatment Plant – raise utilities and other mechanical devices above the BFE. Assure that any mitigation addresses the 500-year flood event or “worst damage scenario”.</p>	<p>1. No Progress / Discontinue 2. The wastewater treatment plant is under the jurisdiction of RCSD</p>	<p>1. Discontinue 2. N/A 3. The wastewater treatment plant is under the jurisdiction of RCSD.</p>

Proposed Hazard Mitigation Initiatives for the HMP Update

Sloatsburg participated in the mitigation strategy workshop for this HMP to identify appropriate actions to include in a local hazard mitigation strategy. Its comprehensive consideration of all possible activities to address hazards of concern included review of the following FEMA documents:

- FEMA 551 “Selecting Appropriate Mitigation Measures for Floodprone Structures” (March 2007)
- FEMA “Mitigation Ideas—A Resource for Reducing Risk to Natural Hazards” (January 2013).

The action worksheets included at the end of this annex list the mitigation actions that Sloatsburg would like to pursue in the future to reduce the effects of hazards. The actions are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in the Village’s priorities.

Table 9.18-18 indicates the range of proposed mitigation action categories. The four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table to further demonstrate the wide range of activities and mitigation measures selected.

Volume I identifies 14 evaluation criteria for prioritizing the mitigation actions. To assist with rating each mitigation action as high, medium, or low priority, a numeric rank is assigned (-1, 0, or 1) for each of the evaluation criteria. Table 9.18-19 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Table 9.18-18. Analysis of Mitigation Actions by Hazard and Category

Hazard	Actions That Address the Hazard, by Action Category									
	FEMA				CRS					
	LPR	SIP	NSP	EAP	PR	PP	PI	NR	SP	ES
Dam Failure	5	-	-	1	5	2	1	-	-	-
Disease Outbreak	3	-	-	1	3	1	1	-	-	-
Drought	4	-	-	1	4	1	1	-	-	-
Earthquake	4	-	-	1	4	1	1	-	-	-
Extreme Temperature	4	-	-	1	4	1	1	-	-	-
Flood	5	3	-	2	5	2	2	-	3	-
Landslide	4	-	-	1	4	1	1	-	-	-
Severe Weather	4	1	-	1	4	1	1	-	1	-
Severe Winter Weather	4	-	-	1	4	1	1	-	-	-
Wildfire	4	-	-	1	4	1	1	-	-	-

Local Plans and Regulations (LPR)—These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.

Structure and Infrastructure Project (SIP)—These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct structures to reduce the impact of hazards.

Natural Systems Protection (NSP)—These are actions that minimize damage and losses and preserve or restore the functions of natural systems.

Education and Awareness Programs (EAP)—These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities

Preventative Measures (PR)—Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.

Property Protection (PP)—These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.

Public Information (PI)—Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.

Natural Resource Protection (NR)—Actions that minimize hazard loss and preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.

Structural Flood Control Projects (SP)—Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.

Emergency Services (ES)—Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities

Table 9.18-19. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Other Community Objectives	Total	High / Medium / Low
2024-SloatsburgV-01	Tributary Flood Remediation	1	1	1	1	1	0	1	1	1	0	1	1	0	1	11	High
2024-SloatsburgV-02	Update Comprehensive Plan	1	1	1	1	1	1	0	1	1	1	0	1	0	1	11	High
2024-SloatsburgV-03	Flood Prone Road Mitigation Measures	0	1	1	1	1	0	1	0	1	0	1	1	0	1	9	Medium
2024-SloatsburgV-04	Emergency Response Plan Update	1	1	1	1	1	1	0	1	1	1	0	1	0	1	11	High
2024-SloatsburgV-05	Public Education and Outreach	1	1	1	1	1	1	0	1	1	1	1	1	0	1	12	High
2024-SloatsburgV-06	Repetitive and Severe Repetitive Loss Properties	1	1	1	1	1	0	1	1	1	1	1	1	0	1	12	High
2024-SloatsburgV-07	Hazard Mitigation Integration for Village Codes	0	1	1	1	1	1	0	0	1	1	1	1	0	1	10	Medium
2024-SloatsburgV-08	NFIP Training	1	1	1	1	1	1	0	1	1	1	1	1	0	1	12	High
2024-SloatsburgV-09	Privately Owned Critical Facility in Floodplain	0	1	1	1	1	0	0	0	1	0	1	1	1	0	8	Medium
2024-SloatsburgV-10	Substantial Damage Management Plan	0	1	1	1	1	1	0	1	1	1	1	1	1	0	11	High
2024-SloatsburgV-11	Dam Owner Partnership	1	1	1	1	1	1	0	1	1	0	1	1	1	0	11	High

Note: Volume 1, Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14).

Action 2024-SloatsburgV-01. Tributary Flood Remediation

Action Name:	2024-SloatsburgV-01. Tributary Flood Remediation		
Description of the Problem:	There is a lack of drainage along Hamilton Avenue and Liberty Rock Road, causing flooding during heavy rains and severe storms.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	Work with partnering agencies to identify feasible mitigation measures to provide relief from flooding impacts caused by the tributary of the Ramapo River on Hamilton Avenue and Liberty Rock Road. Possible measures include drainage ponds, increasing the size of culverts, and green infrastructure		
Lead Agency:	Village of Sloatsburg		
Supporting Agencies:	Rockland County Drainage Agency		
Estimated Cost:	High		
Potential Funding Sources:	FEMA BRIC, HMGP		
Implementation Timeline:	5 years		
Goals Met:	1, 2, 5		
Benefits:	This action would reduce the flooding impacts felt by the Village from the tributary of the Ramapo River.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	This action will assist socially vulnerable populations whose properties are impacted by flooding from the tributary of the Ramapo River. Furthermore, this action will assist in keeping roadways clear of flood waters for the populations which may need to attend medical appointments or require medical attention from first responders.		
Impact on Critical Facilities/Lifelines:	This action would assist in the reduction of roadway flooding from the tributary of the Ramapo River, permitting first responders to traverse the roadways safely.		
Impact on Capabilities	Not applicable		
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.		
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low

Alternatives	Action	Evaluation
	No action	Current problem remains
	Raise banks of tributary to increase storage capacity	Cost prohibitive
	Construct floodwall along tributary	Cost prohibitive

Action 2024-SloatsburgV-02. Update Comprehensive Plan

Action Name:	2024-SloatsburgV-02. Update Comprehensive Plan	
Description of the Problem:	The current comprehensive plan does not incorporate natural hazards considerations, such as dam/levee areas, flood zones (these are also impacted by severe storms and severe winter storms) and high landslide and wildfire susceptibility areas.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	Update Village comprehensive plan. Ensure that local comprehensive plans incorporate natural disaster mitigation techniques through a courtesy review or draft plans by the County Planning Department.	
Lead Agency:	Village of Sloatsburg	
Supporting Agencies:	Planning Board, Rockland County	
Estimated Cost:	Staff time, Low	
Potential Funding Sources:	Village Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 5, 6, 7	
Benefits:	This action will have the Village update its comprehensive plan, which has not been updated in many years. The integration of hazard mitigation principles will present the opportunity for the Village to identify areas of the Village which may be impacted by hazards and plan for future land use accordingly.	
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	The inclusion of hazard mitigation principles into the comprehensive plan may include discussions on how hazard risks may impact socially vulnerable populations in the Village.	
Impact on Critical Facilities/Lifelines:	Updating the comprehensive plan to include hazard mitigation principles may present an opportunity to discuss hazard risks to critical facilities and lifelines in the Village.	
Impact on Capabilities	This action will update an already existing planning capability of the Village, making it more resilient.	

Impact on Future Development:	This action will have a direct impact on future land use in the Village, as the comprehensive plan guides land use principles in the Village.		
Climate Change Considerations:	As impacts from climate change are increasingly felt, the contents in the Village’s comprehensive plan will need to be updated.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action	Evaluation	
	No action	Current problem remains	
	Integrate hazard mitigation principles in only plan elements	The plan will miss integration opportunities in the comprehensive plan main document	
	Integrate hazard mitigation principles in only comprehensive plan main document	The plan will miss integration opportunities in the plan elements	

Action 2024-SloatsburgV-03. Flood Prone Road Mitigation Measures

Action Name:	2024-SloatsburgV-03. Flood Prone Road Mitigation Measures		
Description of the Problem:	The Village has identified multiple flood prone areas and roadways that face an elevated risk to limited access during a flood, which can inhibit emergency response, evacuation efforts, and other service provisions.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	Develop specific mitigation solutions for flood prone road systems (roads, bridges, intersections, drainage, etc.) under the leadership of County DPW.		
Lead Agency:	Village Public Works		
Supporting Agencies:	Rockland County		
Estimated Cost:	Medium		
Potential Funding Sources:	FEMA BRIC, HMGP, Village Budget		
Implementation Timeline:	Within 5 years		
Goals Met:	2		
Benefits:	This action will identify measures to protect infrastructure in the transportation lifeline, which will lead to the assurance of clear roadways for evacuations, regular travel, and emergency responses.		
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	This action will assist socially vulnerable populations whose properties are impacted by flooding along flood prone roads.		

Impact on Critical Facilities/Lifelines:	This action will identify measures to protect infrastructure in the transportation lifeline, which will lead to the assurance of clear roadways for evacuations, regular travel, and emergency responses.		
Impact on Capabilities	Not applicable		
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.		
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events.		
Priority: Check one	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem continues
	Relocate all flood prone road system		Not feasible
	Raise all flood prone roads		Cost prohibitive

Action 2024-SloatsburgV-04. Emergency Response Plan Update

Action Name:	2024-SloatsburgV-04. Emergency Response Plan Update	
Description of the Problem:	Individuals may require additional or different support and resources to be able to implement the Village’s emergency response plan. The current emergency response plan does not include the functional-needs registry. For instance, individuals that have mobility issues or depend on medical equipment may be unable to evacuate on their own during a dam/levee failure, earthquakes, flood, landslide, landslide, severe winter storm, or wildfire. Those with underlying medical conditions may require additional protective and precautionary measures to mitigate the risks from disease outbreaks, droughts, and extreme temperatures.	
Hazard(s) of Concern: Check all that apply	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	Work with Rockland County to obtain access to the functional-needs registry to use as part of the Village’s emergency response plan.	
Lead Agency:	Village of Sloatsburg	
Supporting Agencies:	Rockland County	
Estimated Cost:	Low	
Potential Funding Sources:	Village Budget	
Implementation Timeline:	1 year	
Goals Met:	1, 3, 5	
Benefits:	The Village will have the location of registered members of the socially vulnerable population as well as any emergency or medical information the registrant was willing to share.	

Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Socially vulnerable populations are able to register to the functional-needs registry to have important emergency and medical information stored in a secure system for first responders.	
Impact on Critical Facilities/Lifelines:	This action allows first responders to understand the emergency and medical needs of registered individuals should assistance be needed.	
Impact on Capabilities	This action will update an already existing planning capability of the Village.	
Impact on Future Development:	Future development will be protected by the Emergency Response Plan.	
Climate Change Considerations:	As impacts from climate change are increasingly felt, the contents in an Emergency Response Plan, including in the basic plan and any annexes, may need to be updated.	
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No action	Vulnerable populations will remain unknown
	Do not download information	Population information will not be available to the Village
	Create new system	Cost and start-up restraints

Action 2024-SloatsburgV-05. Public Education and Outreach

Action Name:	2024-SloatsburgV-05. Public Education and Outreach	
Description of the Problem:	Village residents are not aware of hazards that they are exposed to and what can be done to further protect themselves and their properties from damages. The hazards that the Village is at risk for include dam/levee failure, disease outbreak, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, and wildfire. The Village currently does not have a comprehensive education and outreach program. There is a need to educate residents and businesses about hazard mitigation, preparation, response, and recovery.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	Develop and enhance the public awareness program on hazards, prevention, and mitigation. Continue to work with Rockland County on their program that provides information to the municipalities.	
Lead Agency:	Village of Sloatsburg	
Supporting Agencies:	Rockland County	
Estimated Cost:	Low	
Potential Funding Sources:	Village Budget	

Implementation Timeline:	1 year	
Goals Met:	1, 2, 3, 5	
Benefits:	This action will improve the current public education and outreach program in the Village by including discussions on disaster preparedness and hazard mitigation to residents and business owners, which will contribute to the resiliency of the Village.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Socially vulnerable populations will learn how to prepare for and mitigate the various hazards which may impact them in the Village.	
Impact on Critical Facilities/Lifelines:	Businesses, which may be considered critical facilities or lifelines, would be more informed on how to prepare for emergency events and mitigate the risks of potential hazards. With these businesses becoming more resilient, this action would contribute to their continuity of operations.	
Impact on Capabilities	This action would build upon the County's already existing public education and outreach program and adapt it to the Village's needs.	
Impact on Future Development:	Not applicable	
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related disaster events. This action will inform residents and business owners of how to reduce risk from hazards and how climate change may exacerbate those risks.	
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No action	Current methods remain the only ones used
	Rely on state or federal resources	Resources may be generalized and not specific to the risks in the Village
	Use only a few methods for distribution	Using only a few methods of distribution may hinder socially vulnerable populations from receiving the guidance

Action 2024-SloatsburgV-06. Repetitive and Severe Repetitive Loss Properties

Action Name:	2024-SloatsburgV-06. Repetitive and Severe Repetitive Loss Properties	
Description of the Problem:	There is 1 Repetitive Loss and 1 Severe Repetitive Loss property in the Village. These properties exhibit elevated vulnerability and may face increasing risks to flood damage due to changes in precipitation intensity and frequency, raising the possibility for these properties to become Repetitive/Severe Repetitive Loss Properties. These properties may require a disproportionate amount of municipal resources after hazard events if they are damaged.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire

Description of the Solution:	The Village will promote and support non-structural flood hazard mitigation alternatives for at risk properties within the floodplain, including those that have been identified as Repetitive Loss (RL) and Severe Repetitive Loss (SRL), such as acquisition/relocation or elevation depending on feasibility. The parameters for this initiative would be funding, benefits versus cost, and willing participation of property owners.		
Lead Agency:	Floodplain Administrator		
Supporting Agencies:	Rockland County		
Estimated Cost:	Medium		
Potential Funding Sources:	FEMA FMA, FMA SWIFT, Village Budget, County Budget, Property Owners		
Implementation Timeline:	3 years		
Goals Met:	1, 2, 3		
Benefits:	This action would foster comprehensive floodplain management by removing at risk properties from the flood hazard area or elevating properties to reduce the flood risk.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR)	<input type="checkbox"/> Natural Systems Protection (NSP)	
	<input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR)	<input type="checkbox"/> Natural Resource Protection (NR)	
	<input type="checkbox"/> Property Protection (PP)	<input checked="" type="checkbox"/> Structural Flood Control Projects (SP)	
	<input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	Socially vulnerable populations may be able to have houses elevated or acquired when it would otherwise be unaffordable.		
Impact on Critical Facilities/Lifelines:	Removing structures from the floodplain decreases the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.		
Impact on Capabilities	This action will enhance the Village’s current NFIP capabilities.		
Impact on Future Development:	Increased outreach to homeowners within a flood prone area will limit construction in areas that are prone to hazard events. Homes may be acquired, which will remove those structures from the floodplain and prevent future development on those sites.		
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem continues
	Construct flood walls/barriers around vulnerable areas		Costly and can divert floodwaters to other areas
	Deployable flood barriers for vulnerable areas		Requires a great deal of work to implement prior to each event

Action 2024-SloatsburgV-07. Hazard Mitigation Integration for Village Codes

Action Name:	2024-SloatsburgV-07. Hazard Mitigation Integration for Village Codes		
Description of the Problem:	Some facilities were built before code updates; therefore, they may be more susceptible to damage from dam/levee failures, disease outbreaks, drought, earthquakes, extreme temperatures, floods, landslides, severe storms, severe winter storms, and wildfires.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire	
Description of the Solution:	Code update: review existing local codes and ordinances against the identified hazards to determine whether there needs to be any amendments to address identified hazards and, where a need is identified; modify/amend the codes/ordinances as applicable.		
Lead Agency:	Village of Sloatsburg		
Supporting Agencies:	Code Enforcement, Floodplain Administrator, Zoning Officer, Planning Board, Zoning Board		
Estimated Cost:	Low		
Potential Funding Sources:	Village Budget		
Implementation Timeline:	Within 5 years		
Goals Met:	1, 2, 5, 7		
Benefits:	This action will ensure Village codes and ordinances integrate hazard mitigation principles and incorporate current risks from identified hazards.		
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	Socially vulnerable populations may not have direct access to codes and plans, nor speak the language that they are written in.		
Impact on Critical Facilities/Lifelines:	Critical facilities and lifelines will be expected to follow updated plans and codes.		
Impact on Capabilities	The Village’s capability to handle hazard events is greatly improved by integrating hazard mitigation into other plans and codes.		
Impact on Future Development:	This action could result in restrictions for future development.		
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related disaster events. This action permits the Village to strengthen its codes in anticipation of future conditions.		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low

Alternatives	Action	Evaluation
	No Action	-
	Rely on County Plans/Codes	Plans are not specific to the Village and the relevant mitigation issues that they have apart from the County
	Create additional hazard mitigation information	Integrating relevant plans/codes together makes them more useful than creating additional separate documents

Action 2024-SloatsburgV-08. NFIP Training

Action Name:	2024-SloatsburgV-08. NFIP Training	
Description of the Problem:	The Village faces increasing flood risks due to more intense precipitation events. Incorporating best practices and the most up-to-date NFIP guidance will better protect the Village, its residents, and their properties from potential damage. However, some of the Village staff are not adequately trained to enforce NFIP regulations and/or floodplain management ordinances. Floodplain management and ordinance enforcement staff are not Certified Floodplain Managers.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	Provide training and/or certification for Village staff with NFIP regulations and floodplain management ordinances. Encourage staff to become Certified Floodplain Managers via the Association of State Floodplain Manager’s CFM Certification Program.	
Lead Agency:	Floodplain Administrator	
Supporting Agencies:	Village of Sloatsburg	
Estimated Cost:	Low	
Potential Funding Sources:	Village Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 3, 6	
Benefits:	This action will increase the NFIP capabilities of the Village and assure the Village’s NFIP program has enough staff to accomplish its goals and reach NFIP compliance.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Officials that are up to date on flood risk are more likely to encourage development outside areas of high flood risk, which is where socially vulnerable populations have historically resided. Safer dwellings may be developed in a less vulnerable location.	

Impact on Critical Facilities/Lifelines:	The opportunity will exist for leaders and operators of utilities and other essential services to attend training and provide direction on ways the prepare for, plan for, and prevent interruptions in service as a result of a flood.		
Impact on Capabilities	This action will enhance the Village’s current NFIP capabilities.		
Impact on Future Development:	Officials that understand best practices in floodplain management will have the opportunity to influence future development and prevent unsafe building in flood hazard areas.		
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related disaster events. This action will educate staff on NFIP regulations to assist with the flood hazard.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No Action		-
	Hire outside contractors for floodplain administration		Costly
	Establish shared service agreements for floodplain administration from neighboring municipalities		Neighboring municipalities are unlikely to have the staff capacity to take on this role

Action 2024-SloatsburgV-09. Privately Owned Critical Facility in Floodplain

Action Name:	2024-SloatsburgV-09. Privately Owned Critical Facility in Floodplain	
Description of the Problem:	Critical facilities located in the floodplain are not only susceptible to flood damage but also create unnecessary complications for the municipality during an emergency event and post-disaster recovery. The Village does not have the authority to implement mitigation actions to all of these structures.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	Coordinate with the facility managers at the Sloatsburg Wastewater Treatment Plant, N.S.C.I.C. Early Head Start, and NYS Thruway - Sloatsburg/Ramapo Service Area in the Village to support the mitigation of vulnerable structures via retrofit (e.g. elevation, flood-proofing) or relocation to protect structures from future damage. Phase 1: Identify most cost-effective mitigation option Phase 2: Work with facility manager to implement selected action based on available funding and local match ability.	
Lead Agency:	Village of Sloatsburg	
Supporting Agencies:	Facility Managers	
Estimated Cost:	High	
Potential Funding Sources:	FEMA BRIC, HMGP, Village Budget, Private Owners	
Implementation Timeline:	5 years	

Goals Met:	1, 2, 3	
Benefits:	This action will remove or reduce critical facility and community lifeline vulnerability to the flood hazard and remove or reduce safety risks for first responders.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Retrofitting or relocating the identified structures will benefit socially vulnerable populations, as individuals within these populations rely on resources from various government facilities, transportation facilities, and medical and senior care facilities.	
Impact on Critical Facilities/Lifelines:	Noting the number of facilities located within the flood hazard area may encourage the consideration of relocating critical facilities and lifelines from the flood hazard area and deter the development of any additional facilities in the flood hazard area.	
Impact on Capabilities	This action will enhance the Village’s current NFIP capabilities.	
Impact on Future Development:	Noting the number of facilities located within the flood hazard area may encourage the consideration of relocating critical facilities and lifelines from the flood hazard area and deter the development of any additional facilities in the flood hazard area.	
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events. As sea level rises due to climate change, the area of the flood hazard may expand.	
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No action	Current problem continues
	Floodproof existing structures	May not necessarily reduce risk
	Construct floodwalls to stop flood issues	Will most likely interrupt natural floodplain function

Action 2024-SloatsburgV-10. Substantial Damage Management Plan

Action Name:	2024-SloatsburgV-10. Substantial Damage Management Plan	
Description of the Problem:	The municipality does not have a Substantial Damage Management Plan in place, nor do they have a standard process in place when conducting substantial damage determinations. The Village has substantial damage determination provisions in both the adopted NFIP ordinance and adopted building code, but staff are unaware of these provisions and do not leverage them.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire

Description of the Solution:	<p>The municipality will develop a Substantial Damage Management Plan, following the six-step planning process in 2021 Developing a Substantial Damage Management Plan (https://crsresources.org/files/500/developing_subst_damge_mgmt_plan.pdf). This plan will outline responsibilities for Substantial Damage determinations, determining market value, and permit approval processes following a disaster event.</p> <p>The municipality will also take part in workshops and training sessions offered by NYSDEC to train staff on the existing provisions in the NFIP ordinance and building code.</p>	
Lead Agency:	Floodplain Administrator	
Supporting Agencies:	Public Works, OEM, Building Department, Engineering	
Estimated Cost:	Low	
Potential Funding Sources:	Municipal budget	
Implementation Timeline:	Within 5 years to develop the plan; ongoing to maintain and update the plan	
Goals Met:	2, 5, 7	
Benefits:	This plan will provide a process in making Substantial Damage Determinations and allow the municipality to make these determinations and meet NFIP requirements more quickly.	
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Substantially damaged structures are required to be rebuilt to be compliance with current codes. Socially vulnerable populations may not have the financial means to make these improvements. This action may allow for the identification of potential resources to address substantial damages to structures owned by socially vulnerable populations.	
Impact on Critical Facilities/Lifelines:	A Substantial Damage Management Plan would include all critical facilities and lifelines in the municipality.	
Impact on Capabilities	This action improves disaster recovery capabilities.	
Impact on Future Development:	A Substantial Damage Management Plan would include all existing, current, and future development in the municipality.	
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related disaster events. This action provides additional planning for disaster recovery.	
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No Action	-
	Rely on state or federal resources following disaster events	Resources may not be available during major widespread events
	Establish MOUs with outside agencies to conduct Substantial Damage Determinations	A plan outlining responsibilities is still necessary to prevent missing important requirements

Action 2024-SloatsburgV-11. Dam Owner Partnership

Action Name:	2024-SloatsburgV-11. Dam Owner Partnership	
Description of the Problem:	There are multiple dams (Conti Pond Dam, Pine Grove Lake Dam, and Ramapo River Dam), which are critical facilities, located in the 1- and 0.2-percent flood hazard areas that contain or are adjacent to existing residential areas. The Village also has potential impacts from high-hazard potential dams, the Pine Grove Dam and Lake Sebago Dam located outside of its boundaries. The municipality does not own all the dams in its jurisdictions and cannot itself implement mitigation actions to the structures.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	Work with the owners of the dams to ensure inspections and safety procedures are up to date. Identify mitigation actions to ensure the integrity of the dams and that it is protected up to the 0.2-percent flood hazard area.	
Lead Agency:	Village of Sloatsburg	
Supporting Agencies:	Dam Owners, NYSDEC	
Estimated Cost:	Low	
Potential Funding Sources:	Village Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 3, 5	
Benefits:	This action will improve the safety and security of those who live within the dam inundation areas of the dams and increase the resilience of responding agencies. It will also increase communication between the municipality and the dam owners, which can be important during hazard events or other emergencies.	
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	The action will result in better preparedness within the Special Flood Hazard Area and inundation areas where significant risk to socially vulnerable populations exist.	
Impact on Critical Facilities/Lifelines:	Dams are considered a critical facility. This action will create an understanding of the safety procedures in place for each identified dam.	
Impact on Capabilities	This action will improve planning and response capabilities through the understanding of responsibilities and procedures.	
Impact on Future Development:	Depending on the result of this partnership, future development near the dams may be provided with better protection from dam failure events due to improved procedures and communication, as well as any physical improvements to the structures	
Climate Change Considerations:	Climate change may result in an increase in the frequency and severity of weather-related disaster events, which may contribute to the likelihood of a dam failure event. This action will increase the capabilities to respond to these events.	

Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action	Evaluation	
	No Action	Village will be unaware of any safety concerns for the dam or its condition	
	Utilize information from NYSDEC	Owners may not be required to submit a safety plan to the State	
	Utilize information from the National Inventory of Dams	Not all dams are listed on the inventory	

SECTION 9. JURISDICTIONAL ANNEXES

9.19 VILLAGE OF SPRING VALLEY

This jurisdictional annex to the Rockland County Hazard Mitigation Plan (HMP) provides information to assist public and private sectors in the Village of Spring Valley with reducing losses from future hazard events. This annex is not guidance of what to do when a disaster occurs; its focus is on actions that can be implemented prior to a disaster to reduce or eliminate damage to property and people. The annex presents a general overview of the Village of Spring Valley, describes who participated in the planning process, assesses the Village’s risk, vulnerability, and capabilities, and outlines a strategy for achieving a more resilient community.

9.19.1 Hazard Mitigation Planning Team

The Village of Spring Valley identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Village departments. The office of Community Development represented the community on the Rockland County HMP Planning Partnership and Steering Committee and supported the local planning process requirements by securing input from persons with specific knowledge to enhance the plan. All departments were asked to contribute to the annex development through reviewing and contributing to the capability assessment, reporting on the status of previously identified actions, and participating in action identification and prioritization.

Table 9.19-1 summarizes Village officials who participated in the development of the annex and in what capacity. Additional documentation of the Village’s planning activities through Planning Partnership meetings is included in Volume I.

Table 9.19-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Adam McCarey / Village Commissioner Address: 200 N Main St Spring Valley NY, 10977 Phone Number: (845) 352-1100 Email: mjones@villagespringvalley.org	Name/Title: Raymond Canario / Building and Public Works Address: 200 N Main St Spring Valley NY, 10977 Phone Number: (845) 587-3953 Email: rcanario@villagespringvalley.org
National Flood Insurance Program Floodplain Administrator	
Name/Title: Raymond Canario / Building and Public Works Address: 200 N Main St Spring Valley NY, 10977 Phone Number: (845) 587-3953 Email: rcanario@villagespringvalley.org	
Additional Contributors	
Name/Title: Adam McCarey / Village Commissioner Method of Participation: Completed NFIP and hazard event history surveys; reviewed draft annex	
Name/Title: Raymond Canario / Building and Public Works Method of Participation: Reviewed draft annex; provided permit information	
Name/Title: Alan Simon / Mayor Method of Participation: Reviewed draft annex	
Name/Title: Matthew Jones/Department of Community Development Method of Participation: Participated in Risk Assessment and Mitigation Action workshops	

9.19.2 Municipal Profile

The Village of Spring Valley is located along the eastern border of the Village of Ramapo and in a small western portion of the Village of Clarkstown in Rockland County (Rockland County 2018). It is located north of Chestnut Ridge, east of Airmont and Monsey, south of Hillscrest, and west of Nanuet, and lies adjacent to the New York State Thruway (Village of Spring Valley n.d.). The Village is approximately 2.1 square miles in size.

Research has shown that some populations are at greater risk from hazard events because of decreased resources or physical abilities. These populations can be more susceptible to hazard events based on a number of factors including their physical and financial ability to react or respond during a hazard, and the location and construction quality of their housing. Data from the 2017-2021 American Community Survey indicates that 11.3 percent of the population is five years of age or younger, 9.6 percent is 65 years of age or older, 29.4 percent is non-English speaking, 24.2 percent is below the poverty threshold, and 8.3 percent is considered disabled.

9.19.3 Jurisdictional Capability Assessment and Integration

The Village of Spring Valley performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Volume I describes the components included in the capability assessment and their significance for hazard mitigation planning. The jurisdictional assessment for this annex includes analyses of the following:

- Planning and regulatory capabilities
- Development and permitting capabilities
- Administrative and technical capabilities
- Fiscal capabilities
- Education and outreach capabilities
- Classification under various community mitigation programs
- Adaptive capacity to withstand hazard events

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into day-to-day local government operations. As part of the hazard mitigation analysis, planning and /policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress toward plan integration. Development of an updated mitigation strategy provided an opportunity for the Village of Spring Valley to identify opportunities for integration of mitigation concepts that can be incorporated into municipal procedures.

Planning, Legal, and Regulatory Capability and Integration

Table 9.19-2 summarizes the regulatory tools that are available to Village of Spring Valley.

Table 9.19-2. Planning, Legal, and Regulatory Capability and Integration

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Codes, Ordinances, & Regulations				
Building Code	Yes	Chapter 82 Building Construction and Fire Prevention; New York State Uniform Fire Prevention and Building Code (Uniform Code)	State, Local	Spring Valley Building Department; Rockland County Building and Codes Department
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> This Board of Trustees of the Village of Spring Valley adopted the New York State Uniform Fire Prevention and Building Code as the official Building Construction Code for the Village of Spring Valley. The code will be enforced by for the Building Department of Village of Spring Valley, the Building Inspector, Deputy and Assistant Building Inspectors, Fire Inspectors, Deputy and Assistant Fire Inspectors, and Code Enforcement Officers. The County of Rockland’s Department of Building and Codes is responsible for the administration and enforcement of the New York State Uniform Fire Prevention and Building Code (Uniform Code) and the New York State Energy Conservation Construction Code (Energy Code) within the Village of Spring Valley.				
Zoning/Land Use Code	Yes	Chapter 255 Zoning	Local	Building Inspector
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> This chapter is adopted pursuant to § 7-700 of the Village Law for all the purposes set forth in § 7-704 of the Village Law, and all power and authority granted therein are hereby adopted in the interest, protection and promotion of the public health, safety and general welfare. The Zoning Code establishes a Floodplain Overlay District which contains the Special Flood Hazard Areas (SFHAs) within the Village. All uses which are normally allowed either by right or special permit in zoning districts covered by the Floodplain Overlay District are subject to additional special permit approval by the Floodplain Administrator. All construction or substantial improvement must meet several requirements, including being built at or above base flood elevation, and using flood-resistant material and utility equipment, among others.				
Subdivision Code	Yes	Chapter 232 Subdivision of Land	Local	Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> It is declared to be the policy of the Village Planning Board to consider land subdivisions as part of a plan for the orderly, efficient, and economical development of the village. Land to be subdivided shall be of such character that it can be used safely for building purposes without danger to health or peril from fire, flood, or other menace. Proper provision shall be made for drainage, water, sewerage, and other needed improvements. Streets shall be of such width, grade, and location as to accommodate the prospective traffic, to afford adequate light and air and to facilitate fire protection. In proper cases, there shall be reservation of park areas of suitable location, size and character for playground or other recreational purposes.				
Site Plan Code	Yes	Chapter 255 Zoning, Article X Site Development Plan and Architectural Review; Appearance Review Board	Local	Planning Board, Building Department
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> In considering and acting upon a site development plan, the Planning Board shall take into consideration the public health, safety and welfare, the comfort and convenience of the public in general and of the prospective occupants of the proposed development and of the immediate neighborhood. The Planning Board may prescribe appropriate conditions and safeguards to maintain elements of the Village’s character, including its natural environment, public safety, and reservation of land for parks.				
Stormwater Management Code	Yes	Chapter 222 Stormwater Management and Erosion and Sediment Control	Local	Stormwater Management Officer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The purpose of this chapter is to establish minimum stormwater management requirements and controls to protect and safeguard the general health, safety, and welfare of the public residing within this jurisdiction and to address the findings of fact in § 222-1 hereof.				
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Real Estate Disclosure	Yes	New York State (NYS) mandate, Property Condition Disclosure Act, NY Code – Article 14 §460-467	State, Local	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The NYS mandate requires sellers to disclose to potential buyers whether their property is located in a designated floodplain.				
Growth Management	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Environmental Protection Ordinance(s)	Yes	Chapter 130 Freshwater Wetlands	Local	Board of Trustees
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Freshwater Wetlands Protection Law of the Village of Spring Valley is declared to be the public policy of the Village of Spring Valley to preserve, protect and conserve freshwater wetlands and the benefits derived therefrom, to prevent the destruction of freshwater wetlands and to regulate the development of such wetlands in order to secure the natural benefits of freshwater wetlands, consistent with the general welfare and beneficial economic, social and agricultural development. It is further declared to be the policy of the Village of Spring Valley to exercise its authority pursuant to Article 24 of the State Environmental Conservation Law.				
Flood Damage Prevention Ordinance	Yes	Chapter 126 Flood Damage Prevention	Federal, State, Local	Building Inspector
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> It is the purpose of this chapter to promote the public health, safety and general welfare and to minimize public and private losses due to flood conditions in specific areas by provisions designed to regulate uses, properties, and development that are vulnerable to flood damage. New construction and substantial improvements in areas that have base flood elevation data must be built with one foot of freeboard. In areas without base flood elevation data, new construction and substantial improvements must be built with two feet of freeboard.				
Wellhead Protection	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Emergency Management Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Climate Change Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other: Freeboard	Yes	-	State, Local	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> New York State requires new one- and two-family residences to be built with two feet of freeboard and all other construction types with one foot of freeboard. New construction and substantial improvements in areas that have base flood elevation data must be built with one foot of freeboard. In areas without base flood elevation data, new construction and substantial improvements must be built with two feet of freeboard.				
Other: Cumulative Substantial Damage	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Planning Documents				
General/Comprehensive Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Capital Improvement Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Disaster Debris Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Floodplain Management or Watershed Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Stormwater Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Open Space Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Urban Water Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Habitat Conservation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Economic Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Community Wildfire Protection Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Community Forest Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Transportation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Agriculture Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Climate Action/Resiliency/Sustainability Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Tourism Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Business/ DownVillage Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other (for example NYRCR, etc.)	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Response/Recovery Planning				
Comprehensive Emergency Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Continuity of Operations Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Substantial Damage Response Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Threat & Hazard Identification & Risk Assessment	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Post-Disaster Recovery Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Public Health Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

Development and Permitting Capability

Table 9.19-3 summarizes the capabilities of Village of Spring Valley to oversee and track development.

Table 9.19-3. Development and Permitting Capability

Indicate if your jurisdiction implements the following	Yes/No	Comment:
Do you issue development permits? <ul style="list-style-type: none"> If you issue development permits, what department is responsible? If you do not issue development permits, what is your process for tracking new development? 	Yes	The Rockland County Department of Buildings and Codes is responsible for the administration and enforcement of the New York State Uniform Fire Prevention and Building Code (Uniform Code) and the New York State Energy Conservation Construction Code (Energy Code) within the Village of Spring Valley.
Are permits tracked by hazard area? (For example, floodplain development permits.)	Yes	Floodplain development permits

Indicate if your jurisdiction implements the following	Yes/No	Comment:
Do you have a buildable land inventory? <ul style="list-style-type: none"> If you have a buildable land inventory, please describe 	No	-
Describe the level of build-out in your jurisdiction.	N/A	While the Village is primarily built out, there is a small area zoned specifically for Planned Residential Development in the eastern part of the Village bordering the Towns of Ramapo and Clarkstown.

Administrative and Technical Capability

Table 9.19-4 summarizes potential staff and personnel resources available to Village of Spring Valley and their current responsibilities that contribute to hazard mitigation.

Table 9.19-4. Administrative and Technical Capabilities

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
<i>Administrative Capability</i>		
Planning Board	Yes	The Planning Board reviews all new development within the Village.
Zoning Board of Adjustment	Yes	Zoning Board of Appeals hears and decides appeals from the Village’s Building Inspector. The Building Inspector enforces the Zoning Ordinance and the ZBA is where those enforcement decisions may be appealed.
Planning Department	No	-
Mitigation Planning Committee	No	-
Environmental Board/Commission	No	-
Open Space Board/Committee	No	-
Economic Development Commission/Committee	Yes	The Community Development division procures and administers federal and state grants and the building code.
Public Works/Highway Department	Yes	The Village of Spring Valley’s Public Works Department is tasked with various construction services, public services which includes parks maintenance, roadway maintenance (milling and paving), basin repair, heavy machinery operation snow removal and Vehicle Maintenance.
Construction/Building/Code Enforcement Department	Yes	The Rockland County Department of Buildings and Codes is responsible for the administration and enforcement of the New York State Uniform Fire Prevention and Building Code (Uniform Code) and the New York State Energy Conservation Construction Code (Energy Code) within the Village of Spring Valley.
Emergency Management/Public Safety Department	Yes	The Village of Spring Valley has a Police Department and an all-volunteer Fire Department.
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	Yes	The Village of Spring Valley’s Public Works Department is tasked with various construction services, public services which includes parks maintenance, roadway maintenance (milling and paving), basin repair, heavy machinery operation snow removal and Vehicle Maintenance.
Mutual aid agreements	Yes	Rockland County Fire Training Center
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	No	-

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
Other	No	-
<i>Technical/Staffing Capability</i>		
Planners or engineers with knowledge of land development and land management practices	Yes	Contracted Michael Kauker and Associates
Engineers or professionals trained in building or infrastructure construction practices	No	-
Planners or engineers with an understanding of natural hazards	No	-
Staff with expertise or training in benefit/cost analysis	No	-
Professionals trained in conducting damage assessments	No	-
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	No	-
Environmental scientist familiar with natural hazards	No	-
Surveyor(s)	No	-
Emergency Manager	No	-
Grant writer(s)	Yes	Community Development
Resilience Officer	No	-
Other (this could include stormwater engineer, environmental specialist, etc.)	No	-

Fiscal Capability

Table 9.19-5 summarizes financial resources available to Village of Spring Valley.

Table 9.19-5. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use? (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	No
Capital improvements project funding	Yes, if necessary
Authority to levy taxes for specific purposes	Yes
User fees for water, sewer, gas or electric service	No
Impact fees for homebuyers or developers of new development/homes	Yes
Stormwater utility fee	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	Yes
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	Yes
Other federal or state Funding Programs	Yes – Consolidated Local Street and Highway Improvement Program (CHIPs) through NYSDOT Extreme Winter Weather Funding – CHIPs Pave NY - CHIPs
Open Space Acquisition funding programs	Yes
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	No

Education and Outreach Capability

Table 9.19-6 summarizes the education and outreach resources available to Village of Spring Valley.

Table 9.19-6. Education and Outreach Capabilities

Outreach Resources	Available? (Yes/No)	Comment:
Public information officer or communications office	No	-
Personnel skilled or trained in website development	Yes	Contracted
Hazard mitigation information available on your website	No	-
Social media for hazard mitigation education and outreach	Yes	The Village has Facebook and Twitter (X) pages which can be used for hazard mitigation education and outreach.
Citizen boards or commissions that address issues related to hazard mitigation	No	-
Warning systems for hazard events	Yes	The County utilizes NY-Alert and CodeRed (the backup to NY-Alert) for emergency notifications (all Villages and Villages have access to it).
Natural disaster/safety programs in place for schools	No	-
Organizations that conduct outreach to socially vulnerable populations and underserved populations	No	-
Does the jurisdiction have any public outreach mechanisms / programs in place to inform citizens on natural hazards, risk, and ways to protect themselves during such events?	Yes	See below.
If yes, please describe.	-	The Village uses their municipal website, flyers, etc. to inform citizens on natural hazards within the municipality.

Community Classifications

Table 9.19-7 summarizes classifications for community programs available to Village of Spring Valley.

Table 9.19-7. Community Classifications

Program	Participating? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)*	Yes	4.5	-
New York State Department of Environmental Conservation (NYSDEC) Climate Smart Community	No	-	-
National Weather Service Storm Ready Certification	No	-	-
Firewise Communities classification	No	-	-
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable

— = Unavailable

* = At the time of this plan update, the Village was unable to determine the date classified for the Public Protection (ISO Fire Protection Classes 1 to 10) program.

Adaptive Capacity

Adaptive capacity is defined as “the ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or respond to consequences” (IPCC 2022). Each jurisdiction has a unique combination of capabilities to adjust to, protect from, and withstand a future hazard event, future conditions, and changing risk. Table 9.19-8 summarizes the adaptive capacity for each identified hazard of concern and the Village’s capability to address related actions using the following classifications:

- Strong: Capacity exists and is in use.
- Moderate: Capacity might exist; but is not used or could use some improvement.
- Weak: Capacity does not exist or could use substantial improvement.

Table 9.19-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Disease Outbreak	Moderate
Drought	Moderate
Earthquake	Moderate
Extreme Temperature	Moderate
Flood	Moderate
Landslide	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

9.19.4 National Flood Insurance Program Compliance

This section provides specific information on the management and regulation of the regulatory floodplain, including current and future compliance with the National Flood Insurance Program (NFIP). The floodplain administrator listed in Table 9.19-1 is responsible for maintaining this information.

NFIP Summary

Table 9.19-9 summarizes the NFIP statistics for Village of Spring Valley.

Table 9.19-9. Village of Spring Valley NFIP Summary of Policy and Claim Statistics

# Policies	29
# Claims (Losses)	254
Total Loss Payments	\$1,469,991
# Repetitive Loss Properties (NFIP definition)	0
# Repetitive Loss Properties (FMA definition)	29
# Severe Repetitive Loss Properties	4
# Policies Within the 1 percent Annual Chance Flood Boundary	4

NFIP Definition of Repetitive Loss: The NFIP defines a repetitive loss property as any insurable building for which two or more claims of more than \$1,000 were paid by the NFIP within any rolling 10-year period since 1978.

FMA Definition of Repetitive Loss: FEMA’s Flood Mitigation Assistance (FMA) program defines a repetitive loss property as any insurable building that has incurred flood-related damage on two occasions, in which the cost of the repair, on average, equaled or exceeded 25 percent of the market value of the structure at the time of each such flood event.

Definition of Severe Repetitive Loss: A residential property covered under an NFIP flood insurance policy and: (a) That has at least four NFIP claim payments over \$5,000 each, and the cumulative amount of such claims payments exceeds \$20,000; or (b) For which at least two separate claims payments have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building. At least two of the claims must have occurred within any 10-year period, more than 10 days apart.

Source: FEMA, December 2023

Note: RL count may include properties also identified as SRL.

Flood Vulnerability Summary

Table 9.19-10 provides a summary of the NFIP program in Village of Spring Valley.

Table 9.19-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	Memorial Park, Twin Ave., Columbus Ave.
Do you maintain a list of properties that have been damaged by flooding?	No
Do you maintain a list of property owners interested in flood mitigation?	No
How many homeowners and/or business owners are interested in mitigation (elevation or acquisition)?	Noot applicable. A list is not maintained.
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what projects are underway.	No
How do you make Substantial Damage determinations? •	Code Enforcement Office
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	None
How many properties have been mitigated (elevation or acquisition) in your jurisdiction? • If there are mitigation properties, how were the projects funded?	Unknown
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If not, state why.	Yes

NFIP Topic	Comments
NFIP Compliance	
What local department is responsible for floodplain management?	Building Department
Are any certified floodplain managers on staff in your jurisdiction?	Yes
Do you have access to resources to determine possible future flooding conditions from climate change?	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? <ul style="list-style-type: none"> If so, what type of assistance/training is needed? 	Yes - training, funding, staff.
Provide an explanation of NFIP administration services you provide (e.g., permit review, GIS, education/outreach, inspections, engineering capability)	Work off Cornell Cooperative Group
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	Plan review
What are the barriers to running an effective NFIP program in the community, if any?	Staffing and Money
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? <ul style="list-style-type: none"> If so, state the violations. 	No
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	March 18, 2020
What is the local law number or municipal code of your flood damage prevention ordinance?	Chapter 126 Flood Damage Prevention
What is the date that your flood damage prevention ordinance was last amended?	2018
Does your floodplain management program meet or exceed minimum requirements? <ul style="list-style-type: none"> If exceeds, in what ways? 	Meets the minimum requirements
Are there other local ordinances, plans or programs (e.g., site plan review) that support floodplain management and meeting the NFIP requirements? For instance, does the planning board or zoning board consider efforts to reduce flood risk when reviewing variances such as height restrictions?	Yes Article II
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	Yes

9.19.5 Growth/Development Trends

Understanding how past, current, and projected development patterns have or are likely to increase or decrease risk in hazard areas is a key component to appreciating a jurisdiction’s overall risk to its hazards of concern. Recent and expected future development trends, including major residential/commercial development and major infrastructure development, are summarized in Table 9.19-11 through Table 9.19-13.

Table 9.19-11. Number of Building Permits for New Construction Issued Since the Previous HMP

	New Construction Permits Issued			Total
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	
2019				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2020				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2021				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2022				
Total Permits	0	0	0	164
Permits within SFHA	0	0	0	0
2023				
Total Permits	0	0	0	231
Permits within SFHA	0	0	0	0

SFHA = Special Flood Hazard Area (1 percent flood event)

Permit totals were not given for years 2019, 2020, or 2021.

Permit totals for 2022 and 2023 were not broken down by building type; permit total includes all building permits issued, not only for new construction.

Table 9.19-12. Recent Major Development and Infrastructure from 2018 to Present

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
The Village has had no recent major development or infrastructure between 2018 to present.					

* Only location-specific hazard zones or vulnerabilities identified.

Table 9.19-13. Known or Anticipated Major Development and Infrastructure in the Next Five Years

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
There are no known or anticipated major development of infrastructure in the Village in the next five years.					

* Only location-specific hazard zones or vulnerabilities identified.

9.19.6 Jurisdictional Risk Assessment

The hazard profiles in Volume I provide detailed information regarding each planning partner’s vulnerability to the identified hazards, including summaries of the Village of Spring Valley’s risk assessment results and data used to determine the hazard ranking. Key local risk assessment information is presented below.

Hazard Areas

Hazard area maps provided below illustrate the probable hazard areas impacted within the Village are shown in Figure 9.19-1 and Figure 9.19-2. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps are provided only for hazards that can be identified clearly using mapping techniques and technologies and for which Spring Valley has significant exposure. The maps show the location of potential new development, where available.

Figure 9.19-1. Village of Spring Valley Flood and Dam Inundation Hazard Area Extent and Location

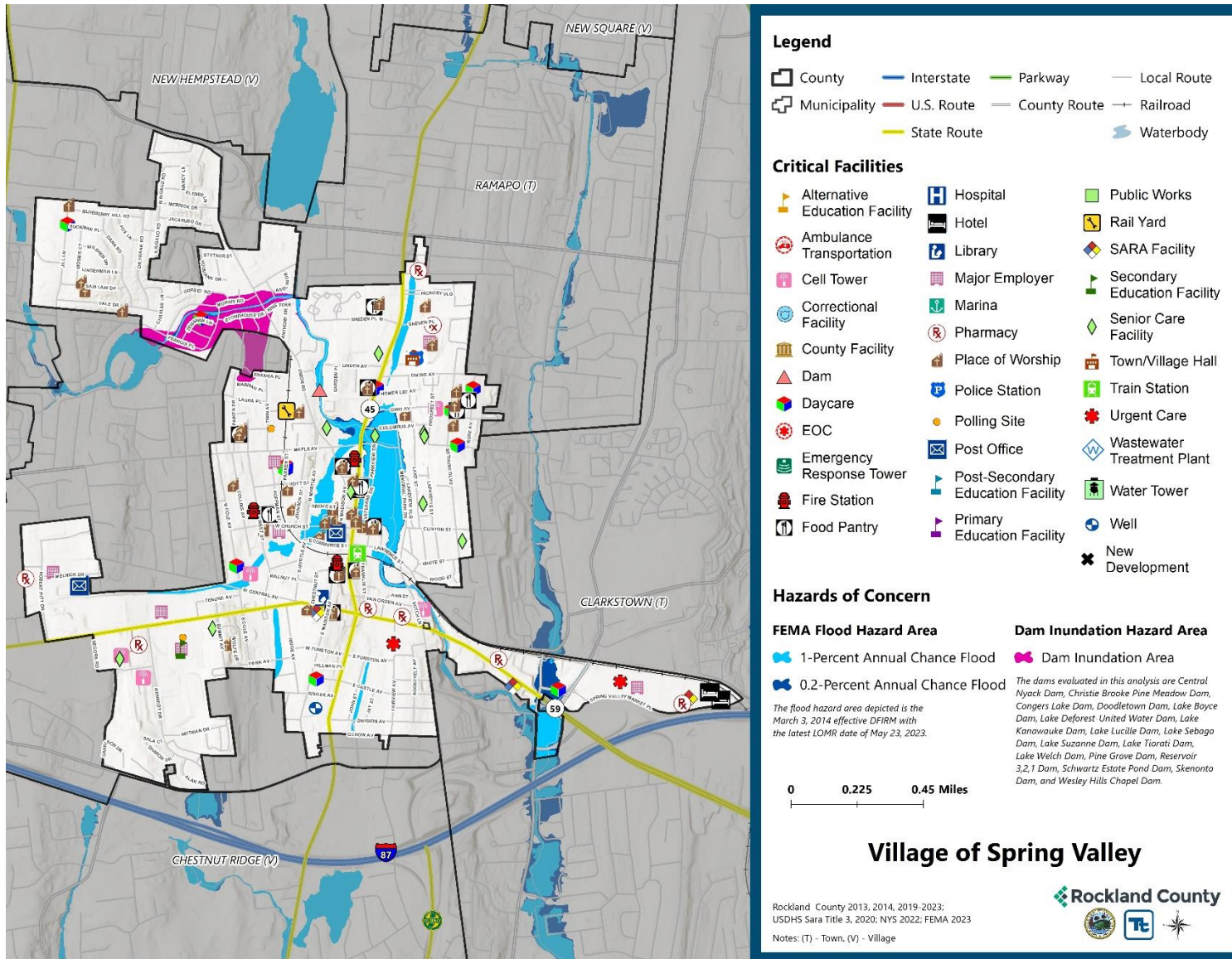
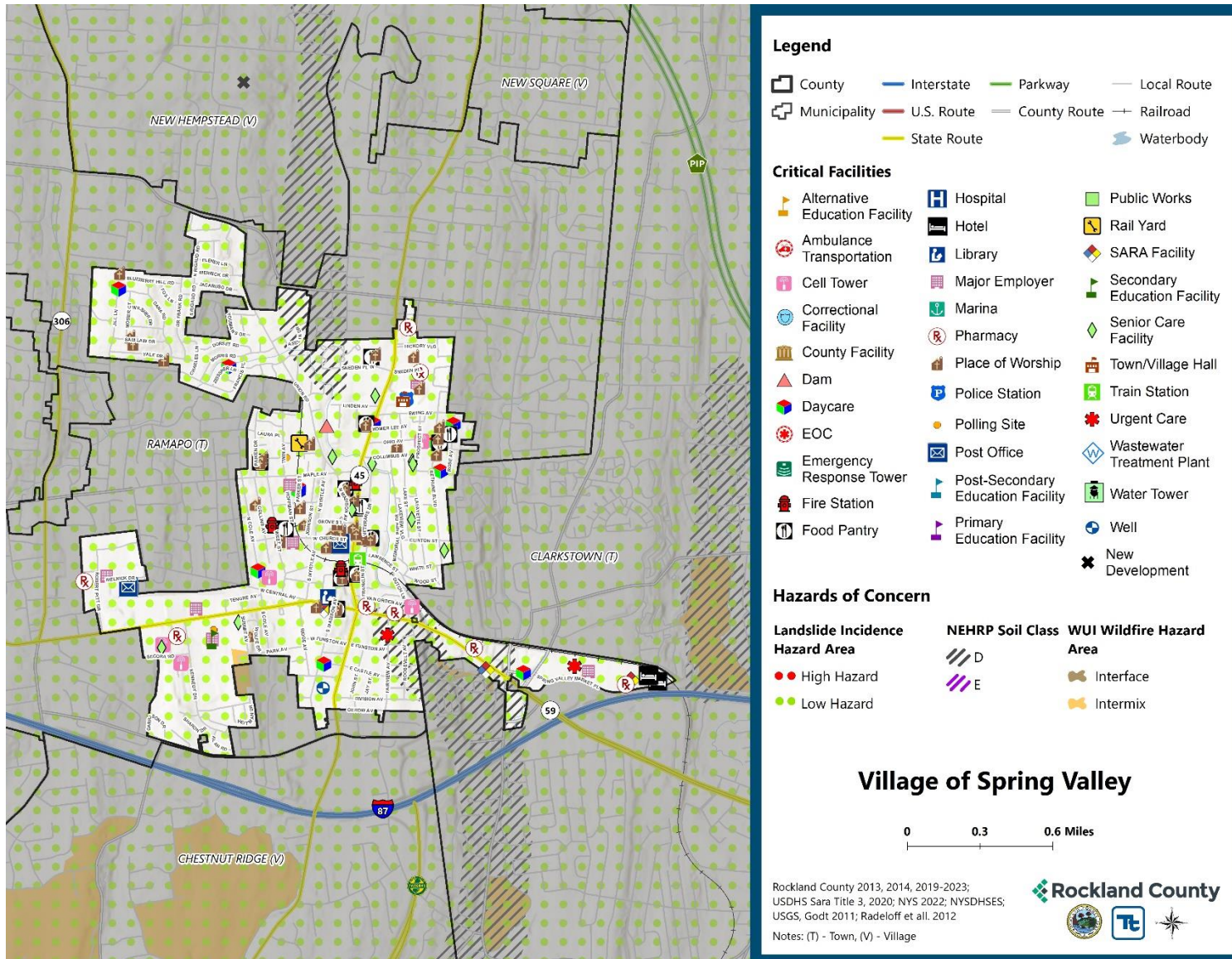


Figure 9.19-2. Village of Spring Valley Landslide, Earthquake, and Wildfire Hazard Area Extent and Location



Hazard Event History

The history of natural and non-natural hazard events in the Village of Spring Valley is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 9.19-14 provides details on loss and damage in the Village during hazard events since the last hazard mitigation plan update.

Table 9.19-14. Hazard Event History in the Village of Spring Valley

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Summary of Damage and Losses in the Village
Jan 20, 2020 - May 11, 2023	New York Covid-19 (3434-EM-NY, 4480-DR-NY)	Yes	The Covid-19 pandemic resulted in nationwide shutdowns, social distancing and masking requirements, and immunization efforts. Since the start of the pandemic, roughly 950 deaths have been reported in Rockland County. The federal Public Health Emergency expired in May 2023 but illness continues to occur as the virus shifts to becoming endemic.	The Village was shut down with limited essential staff only. Open to the public areas were closed.
August 4, 2020	New York Tropical Storm Isaias (4567-DR-NY)	Yes	The center of Isaias passed about 65 miles west of New York City at 3 pm on August 4, 2020. Tropical storm force winds extended well east of the center of circulation. In addition, 1 to 3 inches of rainfall, highest west, were recorded across the county. These types of winds and rainfall across the area resulted in numerous trees and tree limbs being downed, power outages, damages to homes and automobiles, and disruption to transit.	Major flooding in the area of Memorial park and Twin Ave.
August 21-24, 2021	New York Hurricane Henri (3565-EM-NY)	Yes	Rainfall from Tropical Storm Henri resulted in widespread flash flooding across southeastern New York, particularly portions of the Lower Hudson Valley. Rainfall totals generally ranged from 2-5 inches, with this rain coming in addition to the 2-5 inches that fell during the predecessor rainfall event the night before.	Major flooding in the area of Memorial Park and Twin Ave.
September 1-3, 2021	New York Remnants of Hurricane Ida (3572-EM-NY, 4615-DR-NY)	Yes	Extremely heavy rainfall associated with the remnants of Hurricane Ida overspread southeast New York during the evening of September 1 and continued through the early morning hours of September 2. Rainfall totals ranged from 5-8 inches across much of the region, with much of that rain falling in just a few hours. This resulted in widespread catastrophic flash flooding.	Major flooding in the area of Memorial Park and Twin Ave.
July 9-10, 2023	Severe Storm	No	Severe storms and flooding resulted in road closures, including portions of the Palisades Interstate Parkway, throughout Rockland County.	Major flooding in the area of Memorial Park and Twin Ave.

EM = Emergency Declaration (FEMA)
 FEMA = Federal Emergency Management Agency
 DR = Major Disaster Declaration (FEMA)
 N/A = Not applicable

Hazard Ranking and Vulnerabilities

The hazard profiles in Volume I have detailed information regarding each planning partner’s vulnerability to the identified hazards. The following summarizes presents key risk assessment results for the Village of Spring Valley.

Hazard Ranking

The participating jurisdictions have differing degrees of vulnerability to the hazards of concern, so each jurisdiction ranked its own degree of risk to each hazard. The community-specific hazard ranking is based on problems and impacts identified by the risk assessment presented in Volume I. The ranking process involves an assessment of the likelihood of occurrence for each hazard; the potential impacts of the hazard on people, property, and the economy; community capabilities to address the hazard; and changing future climate conditions. Spring Valley reviewed the County hazard ranking and individual results to assess the relative risk of the hazards of concern to the community. During the review of the hazard ranking, the Village indicated that the rankings were accurate.

Table 9.19-15 shows Spring Valley’s final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 9.19-15. Hazard Ranking

Hazard	Rank
Dam Failure	Low
Disease Outbreak	Medium
Drought	Medium
Earthquake	Low
Extreme Temperature	Medium
Flood	Medium
Landslide	Low
Severe Weather	High
Severe Winter Weather	High
Wildfire	Low

Note: The scale is based on the hazard rankings established in Volume I, modified as appropriate based on review by the jurisdiction

Critical Facilities

Table 9.19-16 identifies community critical facilities in the 1 percent and 0.2 percent annual chance floodplains.

Table 9.19-16. Critical Facilities Flood Vulnerability

Name	Type	Exposure		Addressed by Proposed Action	Already Protected to 0.2 percent Flood Level (describe protections)
		1 percent Event	0.2 percent Event		
Onderdonks Pond Dam	Dam	Yes	Yes	2024-Spring ValleyV-04	No
AT&T Wireless 102	Cell Tower	Yes	Yes	2024-Spring ValleyV-06	No
Rock Apostolic Church	Place of Worship	Yes	Yes	2024-Spring ValleyV-06	No
Church Of God of Spring Valley	Place of Worship	Yes	Yes	2024-Spring ValleyV-06	No
New Life Pentecostal Church	Place of Worship	Yes	Yes	2024-Spring ValleyV-06	No
Lakeview Village	Senior Care Facility	Yes	Yes	2024-Spring ValleyV-06	No

Source: Rockland County 2023, FEMA

The following high hazard dams are located in or could impact Village of Spring Valley:

- Lake Suzanne Dam – Rockland County Highway Department

Identified Issues

After review of the Village of Spring Valley hazard event history, hazard rankings, hazard location, and current capabilities, the Village of Spring Valley identified the following vulnerabilities within their community:

- The Village does not have any organizations that conduct outreach to socially vulnerable populations and underserved populations.
- There are flood prone roadways in the Village, including Memorial Park, Twin Avenue, and Columbus Avenue.
- The Village does not have a formalized list of damaged properties or property owners which may be interested in flood mitigation measures, such as elevation or acquisition.
- The Onderdonks Pond Dam, which is a critical infrastructure, is located in the 1- and 0.2-percent flood hazard areas. The Village also has potential impact from a high-hazard potential dam (Lake Suzanne Dam). These structures have the potential to impact those living nearby.
- There are repetitive loss properties in the Village. Repetitively flooded properties place an undue stress on the property owner and Village and efforts should be made to mitigate them.
- There are critical facilities in the Village which are located in the floodplain. Critical facilities located in the floodplain are not only susceptible to flood damage but also create unnecessary complications for the municipality during an emergency event and post-disaster recovery.
- The bridge on Main St/Rt 45 at the base of Columbus Avenue is damaged and in need of updating.
- The current comprehensive plan does not incorporate hazard mitigation principles.
- The current emergency response plan does not include the functional-needs registry.
- The Village is not currently in the CRS program. The Village needs to identify whether joining the program will be beneficial to the community and its residents.

**This issue was identified as a specific area of concern based on resident response to the Rockland County Hazard Mitigation Citizen survey.*

9.19.7 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and prioritizes actions to address over the next five years.

Past Mitigation Initiative Status

Table 9.19-17 indicates progress on the Village's mitigation strategy identified in the 2019 HMP. Actions that are still recommended but not completed or that are in progress are carried forward and combined with new actions as part of the mitigation strategy for this plan update. Previous actions that are now ongoing programs and capabilities are indicated as such and are presented in the capability assessment earlier in this annex.

Additional Mitigation Efforts

In addition to the mitigation initiatives completed in Table 9.19-17, Village of Spring Valley did not identify any mitigation efforts completed since the last HMP.

Table 9.19-17. Status of Previous Mitigation Actions

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Spring Valley-1	Flood Mitigation Measures	Flood, Severe Storm	NFIP Floodplain Administrator (FPA) and Village; with support from County, NYSDHSES, ISO, FEMA	<p>Repetitively flooded properties place an undue stress on the property owner and village and efforts should be made to mitigate them.</p> <p>Support the mitigation of vulnerable structures via retrofit or acquisition/relocation to protect structures from future damage, with Repetitive Loss (RL) and Severe Repetitive Loss (SRL) as a priority when applicable. Spring Valley’s support shall include direct outreach to flood-prone property owners, specifically those identified by FEMA as RL/SRL or otherwise identified as flood-prone and working with interested and voluntary property owners to mitigate their properties based on available funding from FEMA and local (property owner) match availability.</p>	<p>1. No Progress 2. The Village was unable to complete this action due to other priorities.</p>	<p>1. Include 2. Keep as is 3. N/A</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Spring Valley-2	Privately Owned Critical Facility in Floodplain	Flood	Private Owners with Village support	<p>Critical facilities located in the floodplain are not only susceptible to flood damage but also create unnecessary complications for the municipality during an emergency event and post-disaster recovery.</p> <p>The Village does not have jurisdiction over these facilities to mitigate. The Village will notify the facility manager/operator and advise of potential mitigation alternatives to consider, potential funding sources for implementation and that NYS requires that any mitigation addresses the 500-year flood event or “worst damage scenario”.</p>	<p>1. No Progress 2. The Village was unable to complete this action due to other priorities.</p>	<p>1. Include 2. Keep as is 3. N/A</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Spring Valley-3	NFIP Compliance	Flood	NFIP Floodplain Administrator (FPA) and Village; with support from County, NYSDHSES, ISO, FEMA	Continue to maintain compliance with NFIP. Maintain compliance with and good standing in the NFIP including adoption and enforcement of floodplain management, floodplain identification and mapping, and flood insurance outreach to the community. Further meet and/or exceed the minimum NFIP standards and criteria through NFIP-related continued compliance actions.	1. Ongoing Capability 2. The Village maintains reviews of its NFIP Program to ensure compliance.	1. Discontinue 2. N/A 3. The Village maintains reviews of its NFIP Program to ensure compliance.
V. Spring Valley-4	Certified Floodplain Managers	Flood	Village/Village NFIP FPA	Floodplain management and ordinance enforcement staff are not Certified Floodplain Managers. Have local officials who would benefit, become a Certified Floodplain Manager (CFM) through the Association of State Floodplain Managers (ASFPM) and New York State Stormwater and Floodplain Managers Association (NYSSFMA), and pursue relevant continuing education training.	1. Discontinued 2. The Village’s consulting firm has CFMs.	1. Discontinue 2. N/A 3. The Village’s consulting firm has CFMs.

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Spring Valley-5	Replace Main St / Rt 45 Bridge	Severe Storm, Severe Winter Storm, Flood	Village DPW and NYSDOT	The bridge on Main St/Rt 45 at the base of Columbus Avenue is damaged and in need of updating. Work with NYSDOT to replace the bridge located on Main Street / Rt. 45 at the base of Columbus Avenue.	1. No Progress 2. The Village was unable to complete this action due to other priorities.	1. Include 2. Keep as is 3. N/A
V. Spring Valley-6	Comprehensive Plan Update	All Hazards	Village and Rockland County	Current comprehensive plan does not incorporate natural hazards. Work with municipalities to integrate hazard mitigation and hazard areas into local comprehensive plans; a courtesy review of draft plans by the County Planning Department.	1. No Progress 2. The Village was unable to complete this action due to other priorities.	1. Include 2. Keep as is 3. N/A
V. Spring Valley-7	Emergency Response Plan Update	All Hazards	Village and Rockland County	The current emergency response plan does not include the functional-needs registry. Work with Rockland County to obtain access to the functional-needs registry and enhance emergency response plans for the Village.	1. No Progress 2. The Village was unable to complete this action due to other priorities.	1. Include 2. Keep as is 3. N/A

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Spring Valley-8	Flood Damage Prevention Ordinance Update, FEMA Regulations	Flood	Village and Village FPA	<p>Some facilities were built before code updates; therefore, they may be more susceptible to damage from a hazard event.</p> <p>Update/revise floodplain management ordinance to comply with latest FEMA regulations using the updated maps for the Village.</p>	<p>1. Ongoing Capability</p> <p>2. Codes and ordinances are reviewed continuously to identify room for amendments.</p>	<p>1. Discontinue</p> <p>2. N/A</p> <p>3. Ongoing capability. Codes and ordinances are reviewed continuously to identify room for amendments.</p>
V. Spring Valley-9	Community Rating System	All Hazards	Village NFIP FPA, as fully supported by local government officials	<p>The Village is not currently in the CRS program. The Village needs to identify whether joining the program will be beneficial to the community and its residents.</p> <p>Support participation in the NFIP Community Rating System (CRS) program by attending CRS workshop(s) if offered within the county. Join the CRS program if adequate resources to support long term participation can be dedicated.</p>	<p>1. No Progress</p> <p>2. The Village was unable to complete this action due to other priorities.</p>	<p>1. Include</p> <p>2. Keep as is</p> <p>3. N/A</p>

Proposed Hazard Mitigation Initiatives for the HMP Update

Spring Valley participated in the mitigation strategy workshop for this HMP to identify appropriate actions to include in a local hazard mitigation strategy. Its comprehensive consideration of all possible activities to address hazards of concern included review of the following FEMA documents:

- FEMA 551 “Selecting Appropriate Mitigation Measures for Floodprone Structures” (March 2007)
- FEMA “Mitigation Ideas—A Resource for Reducing Risk to Natural Hazards” (January 2013).

The action worksheets included at the end of this annex list the mitigation actions that Spring Valley would like to pursue in the future to reduce the effects of hazards. The actions are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in the Village’s priorities.

Table 9.19-18 indicates the range of proposed mitigation action categories. The four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table to further demonstrate the wide range of activities and mitigation measures selected.

Volume I identifies 14 evaluation criteria for prioritizing the mitigation actions. To assist with rating each mitigation action as high, medium, or low priority, a numeric rank is assigned (-1, 0, or 1) for each of the evaluation criteria. Table 9.19-19 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Table 9.19-18. Analysis of Mitigation Actions by Hazard and Category

Hazard	Actions That Address the Hazard, by Action Category									
	FEMA				CRS					
	LPR	SIP	NSP	EAP	PR	PP	PI	NR	SP	ES
Dam Failure	3	-	-	1	3	-	1	-	-	1
Disease Outbreak	2	-	-	1	2	-	1	-	-	-
Drought	2	-	-	1	2	-	1	-	-	-
Earthquake	2	-	-	1	2	-	1	-	-	-
Extreme Temperature	2	-	-	1	2	-	1	-	-	-
Flood	4	3	-	2	4	3	2	-	3	-
Landslide	2	-	-	1	2	-	1	-	-	-
Severe Weather	3	1	-	1	3	2	1	-	1	-
Severe Winter Weather	2	1	-	1	2	1	1	-	1	-
Wildfire	2	-	-	1	2	-	1	-	-	-

Local Plans and Regulations (LPR)—These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.

Structure and Infrastructure Project (SIP)—These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct structures to reduce the impact of hazards.

Natural Systems Protection (NSP)—These are actions that minimize damage and losses and preserve or restore the functions of natural systems.

Education and Awareness Programs (EAP)—These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities

Preventative Measures (PR)—Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.

Property Protection (PP)—These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.

Public Information (PI)—Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.

Natural Resource Protection (NR)—Actions that minimize hazard loss and preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.

Structural Flood Control Projects (SP)—Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.

Emergency Services (ES)—Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities

Table 9.19-19. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Other Community Objectives	Total	High / Medium / Low
2024-Spring ValleyV-01	Socially Vulnerable Populations Outreach	1	0	1	1	1	1	0	1	1	1	1	1	1	1	12	High
2024-Spring ValleyV-02	Flood Prone Roadways	0	1	1	1	1	0	1	0	1	0	1	1	0	1	9	Medium
2024-Spring ValleyV-03	Flood Mitigation Interest	1	1	1	1	1	1	1	1	1	0	1	1	1	1	13	High
2024-Spring ValleyV-04	Dam Owner Partnership	1	1	1	1	1	1	0	1	1	1	1	1	1	0	12	High
2024-Spring ValleyV-05	Repetitive and Severe Repetitive Loss Properties	1	1	1	1	1	0	1	1	1	1	1	1	0	1	12	High
2024-Spring ValleyV-06	Critical Facilities in the Floodplain	1	1	1	1	1	0	0	1	1	0	1	1	1	0	10	Medium
2024-Spring ValleyV-07	Replace Main St / Rt 45 Bridge	0	1	1	1	0	0	0	1	1	1	1	0	1	0	8	Medium
2024-Spring ValleyV-08	Comprehensive Plan Update	1	1	1	1	1	1	0	1	1	1	0	1	0	1	11	High
2024-Spring ValleyV-09	Emergency Response Plan Update	1	1	1	1	1	1	0	1	1	1	0	1	0	1	11	High
2024-Spring ValleyV-10	Community Rating System (CRS) Program	0	1	1	1	1	1	0	1	1	0	1	1	0	1	10	Medium

Note: Volume I, Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14).

Action 2024-Spring ValleyV-01. Socially Vulnerable Populations Outreach

Action Name:	2024-Spring ValleyV-01. Socially Vulnerable Populations Outreach	
Description of the Problem:	The Village does not have any organizations that conduct outreach to socially vulnerable populations and underserved populations. During hazard events, the public may need to quickly access information about evacuation routes and shelters, or other steps they can take to protect themselves and their property. Residents may also need information about what services are available or offline due to flooding from intense precipitation, dam failure, severe storms, and snow melt; where to receive a vaccination or other healthcare in the event of a disease outbreak; public cooling or heat centers, such as libraries, during extreme temperatures; and evacuation areas for earthquakes, landslides, and wildfires. Socially vulnerable and underserved populations may rely on these types of services more heavily than other segments on the population. Furthermore, they may be less able to access these resources due to a variety of potential obstacles, such as mobility issues or language barriers.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	Create outreach materials, or utilize those from Rockland County, on hazard risks for socially vulnerable populations. Methods of distribution may include Village events, the Village newsletters, social media, the Village website, and having the materials on display for the public at Village libraries and offices. Consider hiring staff to work directly with socially vulnerable populations.	
Lead Agency:	Village Administration	
Supporting Agencies:	Rockland County	
Estimated Cost:	Low	
Potential Funding Sources:	Village Budget, HMGP	
Implementation Timeline:	Within 3 years	
Goals Met:	1, 3, 5	
Benefits:	This action will ensure there is an individual working to identify and work with the socially vulnerable populations in the Village. Furthermore, this action will create opportunities to educate and inform populations on hazard risks.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Socially vulnerable populations in the Village will become educated on hazards risks. The Village will identify an individual to identify and work with these populations to ensure the most up to date information is being shared.	
Impact on Critical Facilities/Lifelines:	Educating populations on hazard risk and how to mitigate the risks can decrease the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.	
Impact on Capabilities	This action would build upon the Village’s already existing public education and outreach program.	

Impact on Future Development:	Not applicable		
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related disaster events. This action will inform residents and business owners of how to reduce risk from hazards and how climate change may exacerbate those risks.		
Priority: Check one	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action	Evaluation	
	No action	Current methods remain the only ones used	
	Rely on state or federal resources	Resources may be generalized and not specific to the risks in the Village	
	Use only a few methods for distribution	Using only a few methods of distribution may hinder socially vulnerable populations from receiving the guidance	

Action 2024-Spring ValleyV-02. Flood Prone Roadways

Action Name:	2024-Spring ValleyV-02. Flood Prone Roadways		
Description of the Problem:	The Village has identified several flood prone roadways in the Village, including Memorial Park, Twin Avenue, and Columbus Avenue, that repeatedly flood due to intense precipitation from severe storms.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The Village will develop specific mitigation solutions for flood prone road systems (roads, bridges, intersections, drainage, etc.) under the leadership of County DPW.		
Lead Agency:	Village Public Works		
Supporting Agencies:	County Public Works		
Estimated Cost:	Medium		
Potential Funding Sources:	FEMA BRIC, HMGP, Village Budget		
Implementation Timeline:	Within 5 years		
Goals Met:	2		
Benefits:	This action will identify measures to protect infrastructure in the transportation lifeline, which will lead to the assurance of clear roadways for evacuations, regular travel, and emergency responses.		
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	This action will assist socially vulnerable populations whose properties are impacted by flooding along flood prone roads.		
Impact on Critical Facilities/Lifelines:	This action will identify measures to protect infrastructure in the transportation lifeline, which will lead to the assurance of clear roadways for evacuations, regular travel, and emergency responses.		
Impact on Capabilities	Not applicable		
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.		
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events.		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low

Alternatives	Action	Evaluation
	No action	Current problem continues
	Relocate all flood prone road system	Not feasible
	Raise all flood prone roads	Cost prohibitive

Action 2024-Spring ValleyV-03. Flood Mitigation Interest

Action Name:	2024-Spring ValleyV-03. Flood Mitigation Interest	
Description of the Problem:	The Village does not have a formalized list of damaged properties or property owners which may be interested in flood mitigation measures, such as elevation or acquisition. Without this information, the Village does not have a streamlined way to assess overall trends in damages/impacts to these properties to determine properties of the highest risk of flood damage. It also does not track communications with property owners or the implementation or interest in potential mitigation efforts.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Floodplain Administration will develop a list for inventorying system or properties damaged by flood events and property owners who are interested in flood mitigation measures, such as elevation or acquisition.	
Lead Agency:	Floodplain Administrator	
Supporting Agencies:	Planning Board, Zoning Board, Village Administration	
Estimated Cost:	Staff time, Low	
Potential Funding Sources:	Village Budget	
Implementation Timeline:	Within 2 years	
Goals Met:	1, 2, 3, 5	
Benefits:	Keeping a list of damaged properties and property owners interested in flood mitigation efforts may lead to the elimination of flood damage to homes and residences, which creating an open space for the municipality and increasing flood storage.	
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Collecting data regarding homeowners that reside within flood prone areas provides an opportunity to introduce location-specific opportunities for assistance. Removing homes from the floodplain immediately removes the risk to life and property.	
Impact on Critical Facilities/Lifelines:	Removing structures from the floodplain decreases the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.	

Impact on Capabilities	This action will create a new Village capability, while enhancing its current NFIP capabilities.		
Impact on Future Development:	Increased outreach to homeowners within a flood prone area will limit construction in areas that are prone to hazard events. Homes may be acquired, which will remove those structures from the floodplain and prevent future development on those sites.		
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events. Areas experiencing flooding conditions may increase. Removing structures from the floodplain will reduce the response and recovery costs as a result of these events and decrease the loss of human life as a result of these events. Elevating structures will reduce the recovery costs as a result of these events.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem remains
	Only share opportunities when notified of grant funding		May not be enough time to garner interest or write application
	Wait for information from the State on flood-damaged properties		May be a delay in notice

Action 2024-Spring ValleyV-04. Dam Owner Partnership

Action Name:	2024-Spring ValleyV-04. Dam Owner Partnership	
Description of the Problem:	The Onderdonks Pond Dam, which is a critical facility, is located in the 1- and 0.2-percent flood hazard areas that contain or are adjacent to existing residential areas. The Village also has potential impact from a high-hazard potential dam (Lake Suzanne Dam) located outside of its boundaries. The municipality does not own all the dams in its jurisdictions and cannot itself implement mitigation actions to the structures.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	Work with the owners of the dams to ensure inspections and safety procedures are up to date. Identify mitigation actions to ensure the integrity of the dams and that it is protected up to the 0.2-percent flood hazard area.	
Lead Agency:	Village Administration	
Supporting Agencies:	Dam Owners, NYSDEC	
Estimated Cost:	Low	
Potential Funding Sources:	Village Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 3, 5	

Benefits:	This action will improve the safety and security of those who live within the dam inundation areas of the dams and increase the resilience of responding agencies. It will also increase communication between the municipality and the dam owners, which can be important during hazard events or other emergencies.		
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	The action will result in better preparedness within the Special Flood Hazard Area and inundation areas where significant risk to socially vulnerable populations exists.		
Impact on Critical Facilities/Lifelines:	Dams are considered a critical facility. This action will create an understanding of the safety procedures in place for each identified dam.		
Impact on Capabilities	This action will improve planning and response capabilities through the understanding of responsibilities and procedures.		
Impact on Future Development:	Depending on the result of this partnership, future development near the dams may be provided with better protection from dam failure events due to improved procedures and communication, as well as any physical improvements to the structures.		
Climate Change Considerations:	Climate change may result in an increase in the frequency and severity of weather-related disaster events, which may contribute to the likelihood of a dam failure event. This action will increase the capabilities to respond to these events.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No Action		Village will be unaware of any safety concerns for the dam or its condition
	Utilize information from NYSDEC		Owners may not be required to submit a safety plan to the State
	Utilize information from the National Inventory of Dams		Not all dams are listed on the inventory

Action 2024-Spring ValleyV-05. Repetitive and Severe Repetitive Loss Properties

Action Name:	2024-Spring ValleyV-05. Repetitive and Severe Repetitive Loss Properties		
Description of the Problem:	There are 29 Repetitive Loss and four Severe Repetitive Loss properties in the Village. These properties exhibit elevated vulnerability and may face increasing risks to flood damage due to changes in precipitation intensity and frequency, raising the possibility for these properties to become Repetitive/Severe Repetitive Loss Properties. These properties may require a disproportionate amount of municipal resources after hazard events if they are damaged.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The Village will promote and support non-structural flood hazard mitigation alternatives for at risk properties within the floodplain, including those that have been identified as Repetitive Loss (RL) and Severe Repetitive Loss (SRL), such as acquisition/relocation or elevation depending on feasibility. The parameters for this initiative would be funding, benefits versus cost, and willing participation of property owners.		

Lead Agency:	Floodplain Administrator		
Supporting Agencies:	Rockland County		
Estimated Cost:	Medium		
Potential Funding Sources:	FEMA FMA, FMA SWIFT, Village Budget, County Budget, Property Owners		
Implementation Timeline:	3 years		
Goals Met:	1, 2, 3		
Benefits:	This action would foster comprehensive floodplain management by removing at risk properties from the flood hazard area or elevating properties to reduce the flood risk.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR)	<input type="checkbox"/> Natural Systems Protection (NSP)	
	<input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR)	<input type="checkbox"/> Natural Resource Protection (NR)	
	<input checked="" type="checkbox"/> Property Protection (PP)	<input checked="" type="checkbox"/> Structural Flood Control Projects (SP)	
	<input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	Socially vulnerable populations may be able to have houses elevated or acquired when it would otherwise be unaffordable.		
Impact on Critical Facilities/Lifelines:	Removing structures from the floodplain decreases the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.		
Impact on Capabilities	This action will enhance the Village’s current NFIP capabilities.		
Impact on Future Development:	Increased outreach to homeowners within a flood prone area will limit construction in areas that are prone to hazard events. Homes may be acquired, which will remove those structures from the floodplain and prevent future development on those sites.		
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem continues
	Construct flood walls/barriers around vulnerable areas		Costly and can divert floodwaters to other areas
	Deployable flood barriers for vulnerable areas		Requires a great deal of work to implement prior to each event

Action 2024-Spring ValleyV-06. Critical Facilities in the Floodplain

Action Name:	2024-Spring ValleyV-06. Critical Facilities in the Floodplain
Description of the Problem:	There are multiple critical facilities in the Village located in the floodplain. These facilities are exposed to flood events and may be vulnerable to damage, service interruptions, or other adverse impacts during or following a flood. The municipality does not own all the facilities in its jurisdictions and cannot itself implement mitigation actions to the structures

Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	Coordinate with the facility managers at AT&T Wireless, Rock Apostolic Church, Church Of God Of Spring Valley, New Life Pentecostal Church, and Lakeview Village Senior Care Facility to support the mitigation of vulnerable structures via retrofit (e.g. elevation, flood-proofing) or relocation to protect structures from future damage. Phase 1: Identify most cost-effective mitigation option Phase 2: Work with facility manager to implement selected action based on available funding and local match ability.	
Lead Agency:	Floodplain Administrator	
Supporting Agencies:	Village Administration, Facility Managers	
Estimated Cost:	High	
Potential Funding Sources:	FEMA BRIC, HMGP, Village Budget, Private Owners	
Implementation Timeline:	5 years	
Goals Met:	1, 2, 3	
Benefits:	This action will remove or reduce critical facility and community lifeline vulnerability to the flood hazard and remove or reduce safety risks for first responders.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Retrofitting or relocating the identified structures will benefit socially vulnerable populations, as individuals within these populations rely on resources from various government facilities, transportation facilities, and medical and senior care facilities.	
Impact on Critical Facilities/Lifelines:	Noting the number of facilities located within the flood hazard area may encourage the consideration of relocating critical facilities and lifelines from the flood hazard area and deter the development of any additional facilities in the flood hazard area.	
Impact on Capabilities	This action will enhance the Village’s current NFIP capabilities.	
Impact on Future Development:	Noting the number of facilities located within the flood hazard area may encourage the consideration of relocating critical facilities and lifelines from the flood hazard area and deter the development of any additional facilities in the flood hazard area.	
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events. As sea level rises due to climate change, the area of the flood hazard may expand.	
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium
		<input type="checkbox"/> Low

Alternatives	Action	Evaluation
	No action	Current problem continues
	Floodproof existing structures	May not necessarily reduce risk
	Construct floodwalls to stop flood issues	Will most likely interrupt natural floodplain function

Action 2024-Spring ValleyV-07. Replace Main St / Rt 45 Bridge

Action Name:	2024-Spring ValleyV-07. Replace Main St / Rt 45 Bridge	
Description of the Problem:	The bridge on Main St/Rt 45 at the base of Columbus Avenue is damaged and vulnerable to flooding from precipitation from severe storms and severe winter storms. Due to the damage, the bridge faces an elevated risk of compound events or failures occurring during a flood event.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	Work with NYS DOT to update the bridge to remove damages, located on Main Street / Rt. 45 at the base of Columbus Avenue.	
Lead Agency:	Village Public Works	
Supporting Agencies:	Rockland County, NYS DOT	
Estimated Cost:	High	
Potential Funding Sources:	FEMA BRIC, HMGP, Village Budget, State Budget, BridgeNY	
Implementation Timeline:	5+ years	
Goals Met:	2, 5	
Benefits:	This action will ensure infrastructure will be protected from future hazard damages and that at least a single transportation route remains accessible to the community.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Not applicable	
Impact on Critical Facilities/Lifelines:	This action ensures transportation routes remain open and accessible to the public for daily use and evacuation needs. The action also provides a point of access for first responders into communities that may have faced damage from a hazard event on either side of the bridge.	
Impact on Capabilities	Increases community resiliency to flooding events in vulnerable areas that would normally be vulnerable to prolonged isolation after high-water events.	
Impact on Future Development:	This action will ensure the bridge is operable for use should future development bring in additional residents and/or visitors.	

Climate Change Considerations:	Ensure the bridge structure is impervious to erosion at its base due to rising water levels.		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem remains
	Remove bridge		Loss of a transportation route
	Rebuild bridge		Cost prohibitive

Action 2024-Spring ValleyV-08. Comprehensive Plan Update

Action Name:	2024-Spring ValleyV-08. Comprehensive Plan Update	
Description of the Problem:	The current comprehensive plan does not incorporate hazard mitigation principles and does not have a strategy to streamline the consideration of the following hazards into its future development and growth: dam/levee failure, disease outbreak, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, or wildfire.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	The Village will update its comprehensive plan. Ensure that the local comprehensive plan incorporates hazard mitigation techniques through a courtesy review or draft plans by the County Planning Department.	
Lead Agency:	Village Planning Board	
Supporting Agencies:	Village Administration, Rockland County	
Estimated Cost:	Staff time, Low	
Potential Funding Sources:	Village Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 5, 6, 7	
Benefits:	This action will have the Village update its comprehensive plan, which has not been updated in many years. The integration of hazard mitigation principles will present the opportunity for the Village to identify areas of the Village which may be impacted by hazards and plan for future land use accordingly.	
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	The inclusion of hazard mitigation principles into the comprehensive plan may include discussions on how hazard risks may impact socially vulnerable populations in the Village.	

Impact on Critical Facilities/Lifelines:	Updating the comprehensive plan to include hazard mitigation principles may present an opportunity to discuss hazard risks to critical facilities and lifelines in the Village.		
Impact on Capabilities	This action will update an already existing planning capability of the Village, making it more resilient.		
Impact on Future Development:	This action will have a direct impact on future land use in the Village, as the comprehensive plan guides land use principles in the Village.		
Climate Change Considerations:	As impacts from climate change are increasingly felt, the contents in the Village’s comprehensive plan will need to be updated.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem remains
	Integrate hazard mitigation principles in only plan elements		The plan will miss integration opportunities in the comprehensive plan main document
	Integrate hazard mitigation principles in only comprehensive plan main document		The plan will miss integration opportunities in the plan elements

Action 2024-Spring ValleyV-09. Emergency Response Plan Update

Action Name:	2024-Spring ValleyV-09. Emergency Response Plan Update	
Description of the Problem:	Individuals may require additional or different support and resources to be able to implement the Village’s emergency response plan. For instance, individuals that have mobility issues or depend on medical equipment may be unable to evacuate on their own during a dam/levee failure, earthquakes, flood, landslide, landslide, severe winter storm, or wildfire. Those with underlying medical conditions may require additional protective and precautionary measures to mitigate the risks from disease outbreaks, droughts, and extreme temperatures.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	Work with Rockland County to obtain access to the functional-needs registry to use as part of the Village’s emergency response plan.	
Lead Agency:	Community Development	
Supporting Agencies:	Rockland County	
Estimated Cost:	Low	
Potential Funding Sources:	Village Budget	
Implementation Timeline:	1 year	
Goals Met:	1, 3, 5	
Benefits:	The Village will have the location of registered members of the socially vulnerable population as well as any emergency or medical information the registrant was willing to share.	

Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Socially vulnerable populations are able to register to the functional-needs registry to have important emergency and medical information stored in a secure system for first responders.	
Impact on Critical Facilities/Lifelines:	This action allows first responders to understand the emergency and medical needs of registered individuals should assistance be needed.	
Impact on Capabilities	This action will update an already existing planning capability of the Village.	
Impact on Future Development:	Future development will be protected by the Emergency Response Plan.	
Climate Change Considerations:	As impacts from climate change are increasingly felt, the contents in an Emergency Response Plan, including in the basic plan and any annexes, may need to be updated.	
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No action	Vulnerable populations will remain unknown
	Do not download information	Population information will not be available to the Village
	Create new system	Cost and start-up restraints

Action 2024-Spring ValleyV-10. Community Rating System (CRS) Program

Action Name:	2024-Spring ValleyV-10. Community Rating System (CRS) Program
Description of the Problem:	The Village is not currently in the CRS program. The Village needs to identify whether joining the program will be beneficial to the community and its residents.
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature <input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Village will evaluate the benefits and costs of participating in CRS program. If feasible, the Village will join the program and begin implementing standards that exceed NFIP requirements.
Lead Agency:	Floodplain Administrator
Supporting Agencies:	Village Administrator
Estimated Cost:	Low
Potential Funding Sources:	Village Budget
Implementation Timeline:	2 years
Goals Met:	2, 3, 5

Benefits:	The participation in the CRS benefits communities by offering discounted rates for flood insurance premiums, which addresses the three goals of the program: reduce and avoid flood damage to insurable property, strengthen and support the insurance aspects of the National Flood Insurance Program, and foster comprehensive floodplain management.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR)	<input type="checkbox"/> Natural Systems Protection (NSP)	
	<input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input checked="" type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR)	<input type="checkbox"/> Natural Resource Protection (NR)	
	<input type="checkbox"/> Property Protection (PP)	<input type="checkbox"/> Structural Flood Control Projects (SP)	
	<input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	The participation in the Community Rating System (CRS) benefits communities by offering discounted rates for flood insurance premiums, which may be more affordable for some socially vulnerable populations.		
Impact on Critical Facilities/Lifelines:	Not applicable		
Impact on Capabilities	This action would enhance the Village’s floodplain management capabilities.		
Impact on Future Development:	Future development would need to adhere to any increased standards established as part of joining the CRS program such as increased freeboard and elevation certificate requirements.		
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events. These changes are likely to increase flood risks.		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		-
	Adopt aspects of the CRS program into the floodplain management program		Increased floodplain management capabilities but no reduction in flood insurance premiums
	Abandon any floodplain management practices not required by NFIP		Reduction in floodplain management capabilities and increase in risk.

SECTION 9. JURISDICTIONAL ANNEXES

9.20 TOWN OF STONY POINT

This jurisdictional annex to the Rockland County Hazard Mitigation Plan (HMP) provides information to assist public and private sectors in the Town of Stony Point with reducing losses from future hazard events. This annex is not guidance of what to do when a disaster occurs; its focus is on actions that can be implemented prior to a disaster to reduce or eliminate damage to property and people. The annex presents a general overview of the Town of Stony Point, describes who participated in the planning process, assesses the Town’s risk, vulnerability, and capabilities, and outlines a strategy for achieving a more resilient community.

9.20.1 Hazard Mitigation Planning Team

The Town of Stony Point identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Town departments. The Town Supervisor represented the community on the Rockland County HMP Planning Partnership and Steering Committee and supported the local planning process requirements by securing input from persons with specific knowledge to enhance the plan. All departments were asked to contribute to the annex development through reviewing and contributing to the capability assessment, reporting on the status of previously identified actions, and participating in action identification and prioritization.

Table 9.20-1 summarizes Town officials who participated in the development of the annex and in what capacity. Additional documentation of the Town’s planning activities through Planning Partnership meetings is included in Volume I.

Table 9.20-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Jim Monaghan, Town Supervisor Address: 74 East Main Street, Stony Point, NY 10980 Phone Number: (845) 825-7801 Email: Supervisor@townofstonypoint.org	Name/Title: Paul Joachim, Deputy Town Supervisor Address: 74 East Main Street, Stony Point, NY 10980 Phone Number: (845) 367-2706 Email: pjoachim@townofstonypoint.org
National Flood Insurance Program Floodplain Administrator	
Name/Title: John Hager, Building Inspector Address: 74 East Main Street, Stony Point, NY 10980 Phone Number: (845) 786-2716 x103 Email: jhager@townofstonypoint.org	
Additional Contributors	
Name/Title: Catherine Murray, Director of Finance Method of Participation: Attended Steering Committee Kick-off Meeting and Planning Partnership Kick-off Meeting	
Name/Title: Karl Javenes, Superintendent of Highways Method of Participation: Attended Planning Partnership Kick-off Meeting	
Name/Title: Sam Justiniano, Town Planner Method of Participation: Reviewed previous actions, completed plan review	
Name/Title: John Hager, Building Inspector Method of Participation: Completed plan review	

Primary Point of Contact	Alternate Point of Contact
Name/Title: John O'Rourke, Town Engineer	
Method of Participation: Completed plan review	

9.20.2 Municipal Profile

The Town of Stony Point is located in the northeastern triangle of Rockland County, approximately 30 miles north of New York City (Rockland County 2018). Stony Point has a total area of 31.6 square miles, approximately 4 of which are water. The Town sits at the southernmost edge of the Hudson Highlands, on the west shore of the Hudson River. Stony Point is bordered to the south by the Town of Haverstraw and the Village of West Haverstraw; to the north and west by the Orange County towns of Highlands, Woodbury, and Tuxedo; and to the east by the Hudson River. Waterways of significance include the Hudson River, Cedar Pond Brook, and a Tributary to Cedar Pond Brook.

Research has shown that some populations are at greater risk from hazard events because of decreased resources or physical abilities. These populations can be more susceptible to hazard events based on a number of factors including their physical and financial ability to react or respond during a hazard, and the location and construction quality of their housing. Data from the 2017-2021 American Community Survey indicates that 4 percent of the population is five years of age or younger, 17.8 percent is 65 years of age or older, 1.8 percent is non-English speaking, 4.5 percent is below the poverty threshold, and 10.9 percent is considered disabled.

9.20.3 Jurisdictional Capability Assessment and Integration

The Town of Stony Point performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Volume I describes the components included in the capability assessment and their significance for hazard mitigation planning. The jurisdictional assessment for this annex includes analyses of the following:

- Planning and regulatory capabilities
- Development and permitting capabilities
- Administrative and technical capabilities
- Fiscal capabilities
- Education and outreach capabilities
- Classification under various community mitigation programs
- Adaptive capacity to withstand hazard events

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into day-to-day local government operations. As part of the hazard mitigation analysis, planning and /policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress toward plan integration. Development of an updated mitigation strategy provided an opportunity for the Town of Stony Point to identify opportunities for integration of mitigation concepts that can be incorporated into municipal procedures.

Planning, Legal, and Regulatory Capability and Integration

Table 9.20-2 summarizes the regulatory tools that are available to The Town of Stony Point.

Table 9.20-2. Planning, Legal, and Regulatory Capability and Integration

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Codes, Ordinances, & Regulations				
Building Code	Yes	Chapter 77 Building Code Administration and Enforcement	State, Local	Code Enforcement Officer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> This chapter provides for the administration and enforcement of the New York State Uniform Fire Prevention and Building Code and the State Energy Conservation Construction Code in this Town. This chapter is adopted pursuant to § 10 of the Municipal Home Rule Law. Except as otherwise provided in the Uniform Code, other state law, or other section of this chapter, all buildings, structures, and premises, regardless of use or occupancy, are subject to the provisions of this chapter. The Town’s Code Enforcement Officer is charged with implementing and enforcing this code.				
Zoning/Land Use Code	Yes	Chapter 215 Zoning	Local	Town Planning Board, Zoning Board of Appeals
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The power and authority granted therein the Comprehensive Zoning Law are hereby adopted in the interest, protection and promotion of the public health, safety, and general welfare. The comprehensive Zoning Law implements the policies for land use in the Town of Stony Point Development Plan. In addition to any existing federal legislation, development activity within the Town's floodplains will be further governed by the relevant section of the Site Development Plan Rules and Regulation.				
Subdivision Code	Yes	Chapter 191 Subdivision of Land	Local	Town Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> It is declared to be the policy of the Town Planning Board to consider land subdivisions as part of a plan for the orderly, efficient, and economical development of the Town. Land to be subdivided shall be of such character that it can be used safely for building purposes without danger to health or peril from fire, flood, or other menace. Proper provision shall be made for drainage, water, sewerage, and other needed improvements.				
Site Plan Code	Yes	Chapter 215 Zoning, Article X Site Development Plan Review	Local	Town Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> In considering and acting upon site development plans, the Planning Board shall take into consideration the public health, safety and welfare and the comfort and convenience of the public in general and of the prospective occupants of the proposed development and of the immediate neighborhood in particular.				
Stormwater Management Code	Yes	Chapter 185 Stormwater Management	Local	Highway Superintendent
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The purpose of this article is to provide for the health, safety, and general welfare of the citizens of the Town of Stony Point through the regulation of non-stormwater discharges to the municipal separate storm sewer system (MS4) to the maximum extent practicable as required by federal and New York State law. One of the objectives of the ordinance is to increase in stormwater runoff from land development activities in order to reduce flooding, siltation, increases in stream temperature, and streambank erosion and maintain the integrity of stream channels.				
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Real Estate Disclosure	Yes	New York State (NYS) mandate, Property Condition Disclosure Act, NY Code – Article 14 §460-467	State, Local	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The NYS mandate requires sellers to disclose to potential buyers whether their property is located in a designated floodplain.				
Growth Management	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Environmental Protection Ordinance(s)	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Flood Damage Prevention Ordinance	Yes	Chapter 112 Flood Damage Prevention	Federal, State, Local	Building Inspector
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Town Board of the Town of Stony Point finds that the potential and/or actual damages from flooding and erosion may be a problem to the residents of the Town of Stony Point and that such damages may include destruction or loss of private and public housing, damage to public facilities, both publicly and privately owned, and injury to and loss of human life. This ordinance requires new construction and substantial improvements to be built with two feet freeboard.				
Wellhead Protection	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Emergency Management Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Climate Change Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other: Freeboard	Yes	Chapter 112 Flood Damage Prevention	State, Local	Building Inspector
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> New York State requires new one- and two-family residences to be built with two feet of freeboard and all other construction types with one foot of freeboard. The Town’s Flood Damage Prevention Ordinance requires all new construction and substantial improvements for residential and non-residential structures to be built to two feet freeboard.				
Other: Cumulative Substantial Damage	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Planning Documents				
General/Comprehensive Plan	Yes	Town of Stony Point 2013 Amendment to the 1995 Master Plan (2013)	Local	Building Department
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> It is the purpose and intent of these recommendations to encourage short-term economic development for the express purpose of offsetting recent unforeseen economic and fiscal factors identified above and to thereby alleviate the tax burden on struggling Stony Point residents and businesses. The Plan recommends addressing flooding issues in the Beach Road area to encourage water-enhanced uses and new development and leveraging hazard mitigation funding to support its waterfront investment goals.				
Capital Improvement Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Disaster Debris Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Floodplain Management or Watershed Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Stormwater Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Open Space Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Urban Water Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Habitat Conservation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Economic Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Community Wildfire Protection Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Community Forest Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Transportation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Agriculture Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
Climate Action/ Resiliency/Sustainability Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Tourism Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Business/ Downtown Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other (for example NYRCR, etc.)	Yes	NY Rising Community Reconstruction Plan Stony Point (2014)	Local	New York Rising Committee

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
This Stony Point NYRCR Plan presents proposed programs, policies and construction initiatives developed by the Stony Point NYRCR Community and the Stony Point NYRCR Planning Committee, comprised of Stony Point residents chosen to represent the community. The study assesses the Town’s risk to flooding and its ability to prepare and respond to future events. The Plan also provides a number of strategies for the Town to pursue to increase its resilience.				
Other (for example NYRCR, etc.)	Yes	Report on Coastal Vulnerability and Sea Level Rise (Dec. 2014)	Local	NYRCR Planning Committee
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
In 2013, Stony Point was chosen for the New York Rising Community Reconstruction Program, that provided significant planning assistance as well as future project funding for recovery from Hurricanes Sandy and Irene and Tropical Storm Lee. This study builds upon that effort by considering coastal vulnerability of tidally influenced areas along the Town’s Hudson River waterfront in light of future rising sea levels and increased storm severity.				
Response/Recovery Planning				
Comprehensive Emergency Management Plan	Yes	Town Emergency Operation Plan (2011)	Local	Emergency Operations Center
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The Emergency Operations Plan aims to assess the Town’s ability to respond to emergency and identifies recommendations to improve its capacity to prepare and respond to future events. The plan addresses both short- and long-term recovery.				
Continuity of Operations Plan	Yes	Town Emergency Operation Plan (2011)	Local	Emergency Operations Center
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The Emergency Operations Plan aims to assess the Town’s ability to respond to emergency and identifies recommendations to improve its capacity to prepare and respond to future events. The plan addresses both short- and long-term recovery.				
The Continuity of Operations (COOP) Plan is intended to guide departments, divisions, and offices in the continued provisions of essential operations and the re-establishment of critical business functions during and after a disaster occurs. Continuity planning is a critical piece of overall emergency management which encompasses prevention, preparedness, mitigation, response, and recovery from a disaster.				
Substantial Damage Response Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Threat & Hazard Identification & Risk Assessment	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Post-Disaster Recovery Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Public Health Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Other	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				

Development and Permitting Capability

Table 9.20-3 summarizes the capabilities of The Town of Stony Point to oversee and track development.

Table 9.20-3. Development and Permitting Capability

Indicate if your jurisdiction implements the following	Yes/No	Comment:
Do you issue development permits? <ul style="list-style-type: none"> If you issue development permits, what department is responsible? If you do not issue development permits, what is your process for tracking new development? 	Yes	Building Department
Are permits tracked by hazard area? (For example, floodplain development permits.)	Yes	Floodplain development permits
Do you have a buildable land inventory? <ul style="list-style-type: none"> If you have a buildable land inventory, please describe 	No	-
Describe the level of build-out in your jurisdiction.	N/A	The Town is mostly developed. The Town includes State Parks (including the Bear Mountain and Harriman State Parks), which limits any future development to residential or industrial zoned areas.

Administrative and Technical Capability

Table 9.20-4 summarizes potential staff and personnel resources available to The Town of Stony Point and their current responsibilities that contribute to hazard mitigation.

Table 9.20-4. Administrative and Technical Capabilities

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
<i>Administrative Capability</i>		
Planning Board	Yes	The Planning Board reviews proposals for the development or redevelopment of parcels located within the town considering the environmental, neighborhood, traffic, parking, and other considerations. It reviews permits for subdivisions, site plans, freshwater wetlands, and special uses.
Zoning Board of Adjustment	Yes	The Zoning Board considers appeals for variances from the zoning ordinance, appeals of decisions made by the Building Inspector, and requests for zoning interpretations.
Planning Department	No	-
Mitigation Planning Committee	No	-
Environmental Board/Commission	No	-
Open Space Board/Committee	No	-
Economic Development Commission/Committee	No	-
Public Works/Highway Department	Yes	The Town of Stony Point's Highway Department works every day to keep the roads as safe as possible. The town's fleet of trucks and an experienced team not only ensure that town roads are treated and plowed in the winter but are also paved and maintained. The Department also repairs failed drain lines and catch basins and picks up brush and appliances. The Department also works cooperatively with other town departments to assist with projects involving the Golf Course, Parks Department, Sewer Department, and other areas in the town.

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
Construction/Building/Code Enforcement Department	Yes	The Building Department, Town of Stony Point, is responsible for the enforcement of all ordinances that affect construction in the town. FEMA floodplain guidelines are strictly followed where applicable and the New York State Building Code controls other aspects of construction. In addition, sections of the Code of the Town of Stony Point cover flood control management and damage control extensively. Town zoning and subdivision regulations and site review processes consider natural hazard risk in considering the presence of floodplains and steep slopes.
Emergency Management/Public Safety Department	Yes	The Stony Point Police Department is comprised of more than two dozen full-time officers and part-time officers in addition to an auxiliary force.
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	Yes	The Town of Stony Point Building and Grounds Department, also known as the Parks Department, are the caretakers of the many parks and buildings in town. This includes snow removal, lawn maintenance, flower, and plant installation, as well as major and minor building repairs. In addition, the Building and Grounds department are responsible for the maintenance and repair of vehicles and machinery used by town departments including police, building department, town hall and sewer as well as its own trucks and machinery.
Mutual aid agreements	Yes	Police Department, Fire Department, Ambulance
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	No	-
Other: Architectural Review Board	Yes	The Architectural Review Board advises the town government to ensure that certain construction projects conform to standards and practices that make our historic town an attractive place to live, work and raise a family.
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Engineering Department
Engineers or professionals trained in building or infrastructure construction practices	Yes	Engineering Department
Planners or engineers with an understanding of natural hazards	Yes	Engineering Department; Highway Superintendent performs stormwater management functions.
Staff with expertise or training in benefit/cost analysis	Yes	Finance Department and contract with engineering firm
Professionals trained in conducting damage assessments	Yes	Contractual
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	No	-
Environmental scientist familiar with natural hazards	No	-
Surveyor(s)	Yes	Engineering Department
Emergency Manager	Yes	Office of Emergency Management
Grant writer(s)	Yes	Contractual
Resilience Officer	No	-
Other (this could include stormwater engineer, environmental specialist, etc.)	No	-

Fiscal Capability

Table 9.20-5 summarizes financial resources available to The Town of Stony Point.

Table 9.20-5. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use? (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	Yes
Capital improvements project funding	Yes
Authority to levy taxes for specific purposes	Yes
User fees for water, sewer, gas, or electric service	Yes
Impact fees for homebuyers or developers of new development/homes	No
Stormwater utility fee	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	No
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	No
Other federal or state Funding Programs	No
Open Space Acquisition funding programs	No
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	No

Education and Outreach Capability

Table 9.20-6 summarizes the education and outreach resources available to The Town of Stony Point.

Table 9.20-6. Education and Outreach Capabilities

Outreach Resources	Available? (Yes/No)	Comment:
Public information officer or communications office	No	-
Personnel skilled or trained in website development	Yes	Contracted
Hazard mitigation information available on your website	Yes	The Town maintains a website has links to the municipal newsletter, local laws and planning documents, the annual budget, county websites, and emergency services.
Social media for hazard mitigation education and outreach	Yes	The Town has a Facebook page which can be used for hazard mitigation education and outreach.
Citizen boards or commissions that address issues related to hazard mitigation	No	-
Warning systems for hazard events	Yes	The County utilizes NY-Alert and CodeRed (the backup to NY-Alert) for emergency notifications (all Towns and Towns have access to it).
Natural disaster/safety programs in place for schools	No	The town would benefit by engaging schools and colleges in order to promote further public outreach and education in the community with respect to natural hazard risk management.
Organizations that conduct outreach to socially vulnerable populations and underserved populations	No	-

Outreach Resources	Available? (Yes/No)	Comment:
Public outreach mechanisms / programs to inform citizens on natural hazards, risk, and ways to protect themselves during such events	Yes	See below.
If yes, please describe.	N/A	The Town has public outreach mechanisms and programs in place, including a Facebook page, to inform citizens on natural hazards. The Town maintains a website has links to the municipal newsletter, local laws and planning documents, the annual budget, county websites, and emergency services.

Community Classifications

Table 9.20-7 summarizes classifications for community programs available to The Town of Stony Point.

Table 9.20-7. Community Classifications

Program	Participating? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	4	8/2011
New York State Department of Environmental Conservation (NYSDEC) Climate Smart Community	No	-	-
National Weather Service Storm Ready Certification	No	-	-
Firewise Communities classification	No	-	-
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable
 — = Unavailable

Adaptive Capacity

Adaptive capacity is defined as “the ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or respond to consequences” (IPCC 2022). Each jurisdiction has a unique combination of capabilities to adjust to, protect from, and withstand a future hazard event, future conditions, and changing risk. Table 9.20-8 summarizes the adaptive capacity for each identified hazard of concern and the Town’s capability to address related actions using the following classifications:

- Strong: Capacity exists and is in use.
- Moderate: Capacity might exist; but is not used or could use some improvement.
- Weak: Capacity does not exist or could use substantial improvement.

Table 9.20-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Disease Outbreak	Moderate
Drought	Moderate
Earthquake	Moderate

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Extreme Temperature	Moderate
Flood	Moderate
Landslide	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

9.20.4 National Flood Insurance Program Compliance

This section provides specific information on the management and regulation of the regulatory floodplain, including current and future compliance with the National Flood Insurance Program (NFIP). The floodplain administrator listed in Table 9.20-1 is responsible for maintaining this information.

NFIP Summary

Table 9.20-9 summarizes the NFIP statistics for The Town of Stony Point.

Table 9.20-9. The Town of Stony Point NFIP Summary of Policy and Claim Statistics

# Policies	56
# Claims (Losses)	97
Total Loss Payments	\$3,170,230
# Repetitive Loss Properties (NFIP definition)	2
# Repetitive Loss Properties (FMA definition)	4
# Severe Repetitive Loss Properties	0
# Policies Within the 1 percent Annual Chance Flood Boundary	0

NFIP Definition of Repetitive Loss: The NFIP defines a repetitive loss property as any insurable building for which two or more claims of more than \$1,000 were paid by the NFIP within any rolling 10-year period since 1978.

FMA Definition of Repetitive Loss: FEMA’s Flood Mitigation Assistance (FMA) program defines a repetitive loss property as any insurable building that has incurred flood-related damage on two occasions, in which the cost of the repair, on average, equaled or exceeded 25 percent of the market value of the structure at the time of each such flood event.

Definition of Severe Repetitive Loss: A residential property covered under an NFIP flood insurance policy and: (a) That has at least four NFIP claim payments over \$5,000 each, and the cumulative amount of such claims payments exceeds \$20,000; or (b) For which at least two separate claims payments have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building. At least two of the claims must have occurred within any 10-year period, more than 10 days apart.

Source: FEMA, December 2023

Note: RL count may include properties also identified as SRL.

Flood Vulnerability Summary

Table 9.20-10 provides a summary of the NFIP program in The Town of Stony Point.

Table 9.20-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	Areas along the Cedar Pond Brook and Mls. Creek. and along the Hudson River Areas that are downhill from bedrock outcrops and shallow soils throughout the Town
Do you maintain a list of properties that have been damaged by flooding?	The Town does not have a dedicated list but documentation of flooding that causes damage is maintained in each parcel file. No single source referencing those is available at this time.
Do you maintain a list of property owners interested in flood mitigation?	No
How many homeowners and/or business owners are interested in mitigation (elevation or acquisition)?	Unknown
Are any RiskMAP projects currently underway in your jurisdiction? <ul style="list-style-type: none"> If so, state what projects are underway. 	No
How do you make Substantial Damage determinations?	Post disaster inspection and Flood plain development permit
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	None
How many properties have been mitigated (elevation or acquisition) in your jurisdiction? <ul style="list-style-type: none"> If there are mitigation properties, how were the projects funded? 	+/- 20 properties through FEMA Claims
Do your flood hazard maps adequately address the flood risk within your jurisdiction? <ul style="list-style-type: none"> If not, state why. 	Yes, FIRMS were updated in 2014 and Stony Point adopted "advisory" flood elevation regulations local law #1 of 2014.
NFIP Compliance	
What local department is responsible for floodplain management?	Building Department
Are any certified floodplain managers on staff in your jurisdiction?	Yes
Do you have access to resources to determine possible future flooding conditions from climate change?	Yes, through the Town's consulting planner and Sea Level Rise Study.
Does your floodplain management staff need any assistance or training to support its floodplain management program? <ul style="list-style-type: none"> If so, what type of assistance/training is needed? 	Yes, could benefit from refresher courses for current FEMA certs. Additional staff could benefit from FEMA courses.
Provide an explanation of NFIP administration services you provide (e.g., permit review, GIS, education/outreach, inspections, engineering capability)	FIRM map resources, online Firmette resources, permit application, review, issuance. Damage evaluations, repair cost versus replacement value comparisons, flood plain violations.
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	Cost of improvement versus replacement value
What are the barriers to running an effective NFIP program in the community, if any?	Property owner resistance to code requirements
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? <ul style="list-style-type: none"> If so, state the violations. 	No
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	April 14, 2022
What is the local law number or municipal code of your flood damage prevention ordinance?	Chapter 112 – Flood Damage Prevention

NFIP Topic	Comments
What is the date that your flood damage prevention ordinance was last amended?	Adopted on October 8, 2013. §112-6, Basis for establishing areas of special flood hazard amended January 14, 2014; §112-9, Penalties for offenses amended April 26, 2022.
Does your floodplain management program meet or exceed minimum requirements? • If exceeds, in what ways?	Yes, ABFEs for Hudson River were adopted locally as benchmark standards.
Are there other local ordinances, plans or programs (e.g., site plan review) that support floodplain management and meeting the NFIP requirements? For instance, does the planning board or zoning board consider efforts to reduce flood risk when reviewing variances such as height restrictions?	For waterfront mixed use development, high is measured from advisory base flood elevation (ABFE).
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	The Town is interested in joining the CRS program but has limited funding to support a program that would benefit a minority of property owners.

9.20.5 Growth/Development Trends

Understanding how past, current, and projected development patterns have or are likely to increase or decrease risk in hazard areas is a key component to appreciating a jurisdiction’s overall risk to its hazards of concern. Recent and expected future development trends, including major residential/commercial development and major infrastructure development, are summarized in Table 9.20-11 through Table 9.20-13.

Table 9.20-11. Number of Building Permits for New Construction Issued Since the Previous HMP

	New Construction Permits Issued			Total
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	
2018				
Total Permits	5	0	2	7
Permits within SFHA	1	0	0	1
2019				
Total Permits	5	0	1	6
Permits within SFHA	0	0	1	1
2020				
Total Permits	2	0	0	2
Permits within SFHA	0	0	0	0
2021				
Total Permits	8	0	0	8
Permits within SFHA	0	0	0	0
2022				
Total Permits	8	0	0	8
Permits within SFHA	0	0	0	0

SFHA = Special Flood Hazard Area (1 percent flood event)

Table 9.20-12. Recent Major Development and Infrastructure from 2018 to Present

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
Ba Mar	Mobile home park	130+/-	Ba Mar Dr.	flood	Replace units damaged

* Only location-specific hazard zones or vulnerabilities identified.

Table 9.20-13. Known or Anticipated Major Development and Infrastructure in the Next Five Years

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
Eagle Bay	apartments	240+/-	Hudson Dr.	flood	New complex

* Only location-specific hazard zones or vulnerabilities identified.

9.20.6 Jurisdictional Risk Assessment

The hazard profiles in Volume I provide detailed information regarding each planning partner’s vulnerability to the identified hazards, including summaries of the Town of Stony Point’s risk assessment results and data used to determine the hazard ranking. Key local risk assessment information is presented below.

Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Town are shown in Figure 9.20-1 and Figure 9.20-2. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps are provided only for hazards that can be identified clearly using mapping techniques and technologies and for which Stony Point has significant exposure. The maps show the location of potential new development, where available.

Figure 9.20-1. The Town of Stony Point Flood and Dam Inundation Hazard Area Extent and Location

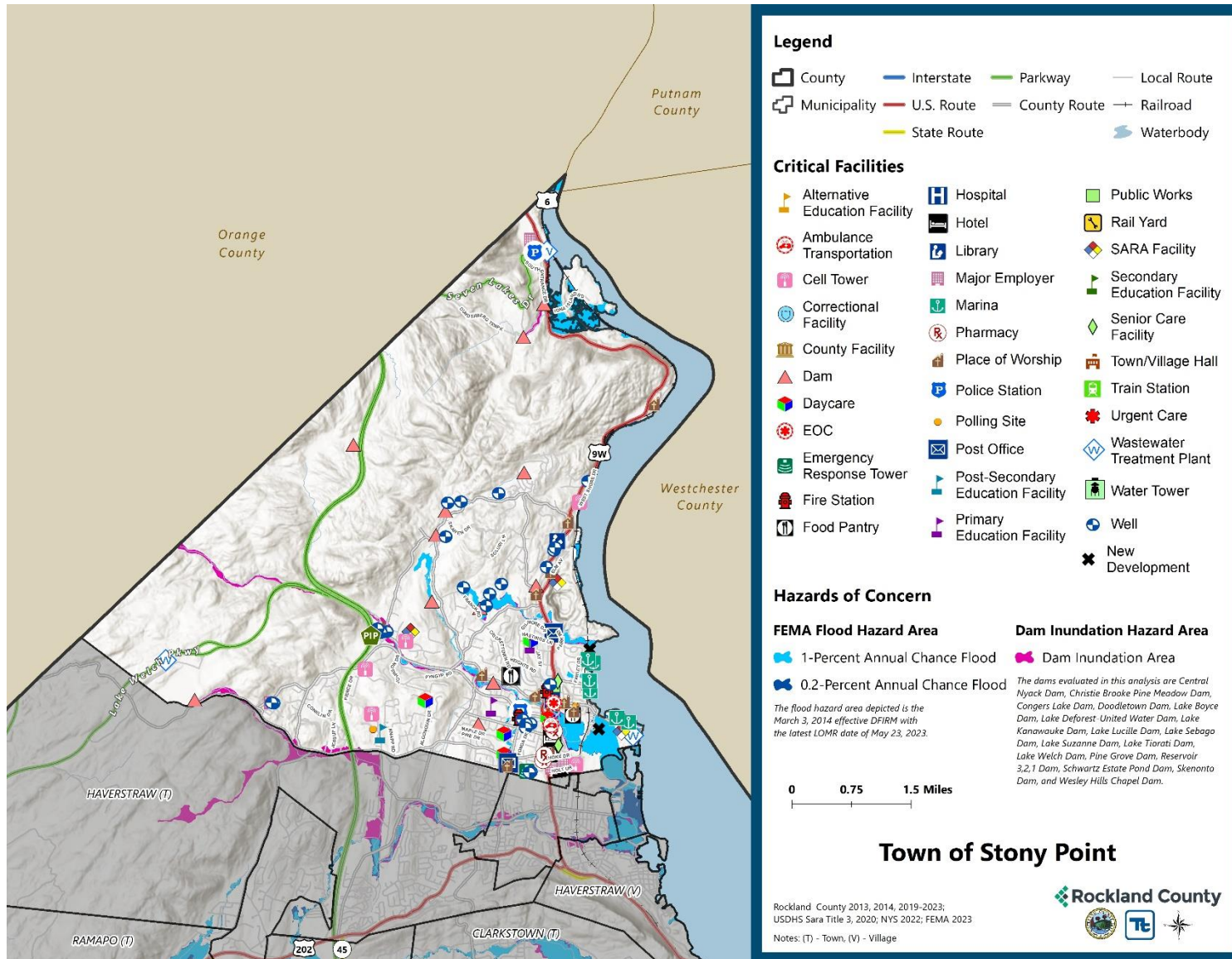
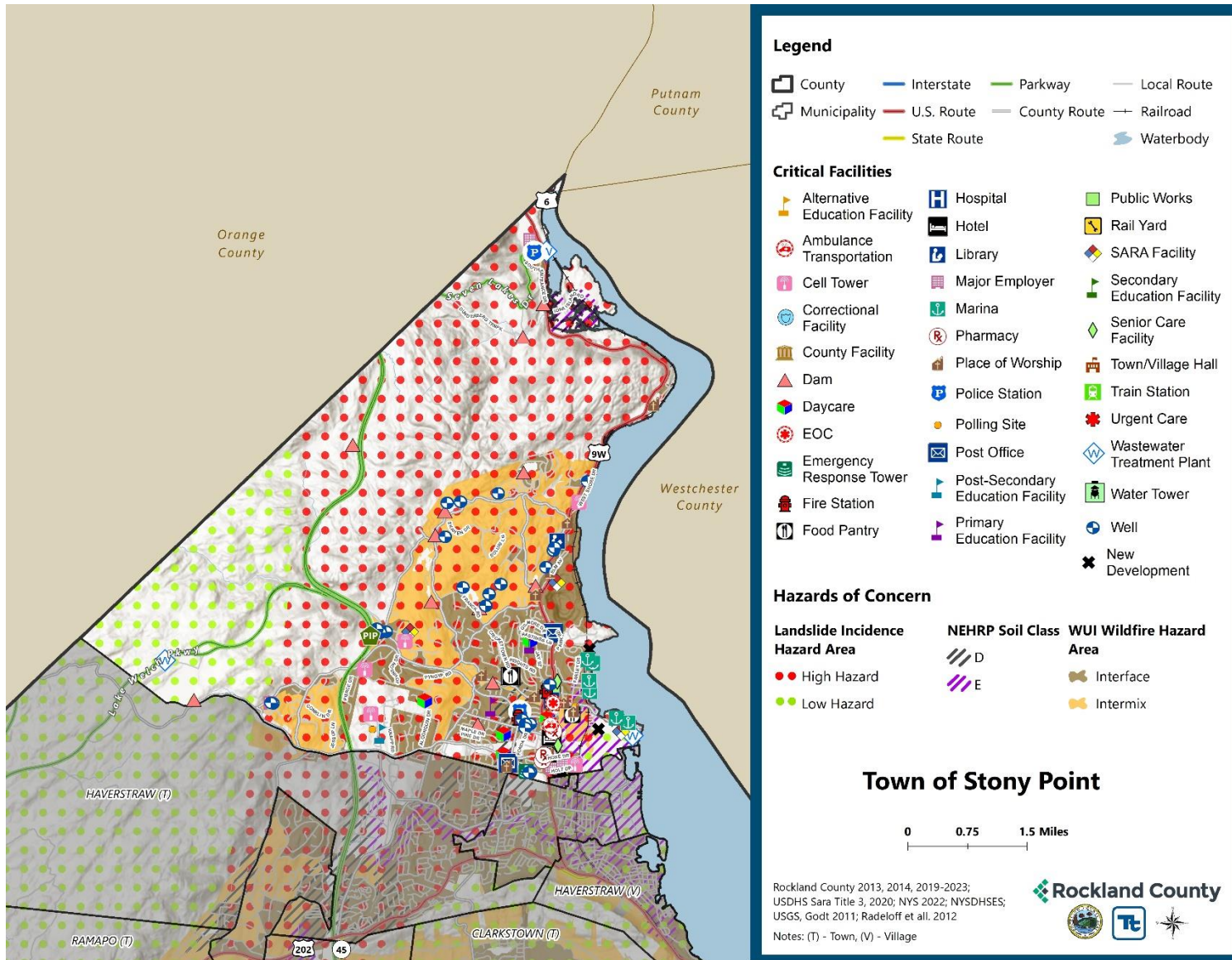


Figure 9.20-2. The Town of Stony Point Landslide, Earthquake, and Wildfire Hazard Area Extent and Location



Hazard Event History

The history of natural and non-natural hazard events in the Town of Stony Point is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 9.20-14 provides details on loss and damage in the Town during hazard events since the last hazard mitigation plan update.

Table 9.20-14. Hazard Event History in the Town of Stony Point

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Summary of Damage and Losses in the Town
Jan 20, 2020 - May 11, 2023	New York Covid-19 (3434-EM-NY, 4480-DR-NY)	Yes	The Covid-19 pandemic resulted in nationwide shutdowns, social distancing and masking requirements, and immunization efforts. Since the start of the pandemic, roughly 950 deaths have been reported in Rockland County. The federal Public Health Emergency expired in May 2023, but illness continues to occur as the virus shifts to becoming endemic.	COVID shutdowns resulted in the closure of some local businesses. Covid restrictions resulted in the cancelation of the town day camp program in 2020 and required a scaled down version of day camp in 2021. Covid restrictions in 2020 required changes to our town pool membership policies.
August 4, 2020	New York Tropical Storm Isaias (4567-DR-NY)	Yes	The center of Isaias passed about 65 miles west of New York City at 3 pm on August 4, 2020. Tropical storm force winds extended well east of the center of circulation. In addition, 1 to 3 inches of rainfall, highest west, were recorded across the county. These types of winds and rainfall across the area resulted in numerous trees and tree limbs being downed, power outages, damages to homes and automobiles, and disruption to transit.	Downed trees and widespread power outages in Stony Point.
April 14, 2023	Transportation Accident	No	A CSX freight train was traveling through the Town of Clarkstown, Stony Point, Haverstraw, the Town of Haverstraw, and the Town of West Haverstraw when fires began. It appears to have caused sparks to fly along the route through these municipalities, creating dozens of brush fires.	Multiple brush fires in town as a result of a CSX freight train malfunction.
July 9-10, 2023	Severe Storm, Flooding	No	Severe storms and flooding resulted in road closures, including portions of the Palisades Interstate Parkway, throughout Rockland County.	Localized flooding in areas around town. Property damage due to flooding at Charles Echer town park, 2 residences on Lowland Hill Road, 2 residences on Route 210 and 1 residence on Delaware Court. Damage to town and county roadways in town due to flooding. Traffic impacts due to Rt 9W and PIP closures.

EM = Emergency Declaration (FEMA)
 FEMA = Federal Emergency Management Agency
 DR = Major Disaster Declaration (FEMA)
 N/A = Not applicable

Hazard Ranking and Vulnerabilities

The hazard profiles in Volume I have detailed information regarding each planning partner’s vulnerability to the identified hazards. The following summarizes presents key risk assessment results for the Town of Stony Point.

Hazard Ranking

The participating jurisdictions have differing degrees of vulnerability to the hazards of concern, so each jurisdiction ranked its own degree of risk to each hazard. The community-specific hazard ranking is based on problems and impacts identified by the risk assessment presented in Volume I. The ranking process involves an assessment of the likelihood of occurrence for each hazard; the potential impacts of the hazard on people, property, and the economy; community capabilities to address the hazard; and changing future climate conditions. Stony Point reviewed the County hazard ranking and individual results to assess the relative risk of the hazards of concern to the community. During the review of the hazard ranking, the Town indicated the following:

- The Flood hazard ranking was increased from Medium to High due to the increased frequency of occurrence.
- The Landslide hazard ranking was decreased from High to Medium because the lack of event occurrence.

Table 9.20-15 shows Stony Point’s final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 9.20-15. Hazard Ranking

Hazard	Rank
Dam Failure	Low
Disease Outbreak	Medium
Drought	Medium
Earthquake	Low
Extreme Temperature	Medium
Flood	High
Landslide	Medium
Severe Weather	High
Severe Winter Weather	High
Wildfire	Medium

Note: The scale is based on the hazard rankings established in Volume I, modified as appropriate based on review by the jurisdiction

Critical Facilities

Table 9.20-16 identifies critical facilities in the community located in the 1 percent and 0.2 percent annual chance floodplains.

Table 9.20-16. Critical Facilities Flood Vulnerability

Name	Type	Exposure		Addressed by Proposed Action	Already Protected to 0.2 percent Flood Level (describe protections)
		1 percent Event	0.2 percent Event		
Ambrey Pond Dam	Dam	Yes	Yes	2024-StonyPointT-01	-
Doodletown Brook R R Dam	Dam	Yes	Yes	2024-StonyPointT-01	-
Lake Boyce Dam	Dam	Yes	Yes	2024-StonyPointT-01	-
Stony Point Dam	Dam	Yes	Yes	2024-StonyPointT-01	-
Belle Harbor Marina	Marina	Yes	Yes	2024-StonyPointT-02	-
Pennybridge Marine Sales	Marina	Yes	Yes	2024-StonyPointT-02	-
Stony Point Bay Corp/Cannon Ball Yacht Club	Marina	Yes	Yes	2024-StonyPointT-02	-
Cedar Brook Homes Well	Well	Yes	Yes	2024-StonyPointT-02	-
Marvello Country Club Well #1	Well	Yes	Yes	-	The Marvello Country Club was replaced by the Virgin Mary & St. Pachomius Coptic Orthodox Church who completed various improvements to the property including drainage and fire suppression.

Source: Rockland County 2023, FEMA

In addition to critical facilities that are exposed to flooding, the following high hazard dams are located in or could impact The Town of Stony Point:

- Lake Welch Dam – New York Office of Parks, Recreation and Historic Preservation, Palisades Interstate Park Commission

Identified Issues

After review of the Town of Stony Point’s hazard event history, hazard rankings, hazard location, and current capabilities, the Town of Stony Point identified the following vulnerabilities within their community:

- There are multiple dams, which are critical infrastructures, located in the 1- and 0.2-percent flood hazard areas. The Town also has potential impacts from a high-hazard potential dam, the Lake Welch Dam. These structures have the potential to impact those living nearby.
- Critical facilities located in the floodplain are not only susceptible to flood damage but also create unnecessary complications for the municipality during an emergency event and post-disaster recovery.
- The Town’s Emergency Operations Plan was last updated in 2011.
- The Town does not have any organizations that conduct outreach to socially vulnerable populations and underserved populations.
- Repetitively flooded properties place an undue stress on the property owner and Town and efforts should be made to mitigate them.

- The Town does not have a comprehensive plan.
- The Patriot Hills building, designated as the emergency center for the Town, requires internal updates to become a viable emergency center.
- The wastewater treatment plant is at risk to impacts from natural hazards.
- Storm and tidal water intrusion impact sewer lines and cause sewerage overflow along Beach Road, in the Ba Mar Mobile Home Park, and into the environment.
- There are 10 highly ranked culvert crossings in the Town which need to be right-sized.
- The current Local Waterfront Revitalization Plan does not thoroughly incorporate hazard mitigation considerations.
- The Town does not participate in NOAA’s Storm Ready program.
- The Town does not have a Short-Term Response and Recovery Plan.
- The Town does not have an evacuation plan.
- The public and businesses may not be aware of the risks associated with natural hazards.

**This issue was identified as a specific area of concern based on resident response to the Rockland County Hazard Mitigation Citizen survey.*

9.20.7 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and prioritizes actions to address over the next five years.

Past Mitigation Initiative Status

Table 9.20-17 indicates progress on the Town’s mitigation strategy identified in the 2019 HMP. Actions that are still recommended but not completed or that are in progress are carried forward and combined with new actions as part of the mitigation strategy for this plan update. Previous actions that are now ongoing programs and capabilities are indicated as such and are presented in the capability assessment earlier in this annex.

Additional Mitigation Efforts

In addition to the mitigation initiatives completed in Table 9.20-17, the Town of Stony Point identified the following mitigation efforts:

- Cleaned Osborn retention pond
- Added berms at Dunderberg swales
- Installed larger drainage piping at Rosetown Road
- Replaced deteriorated aluminum drainage piping throughout the Town
- The Town is currently installing a berm at the Charles Eccher Park Brook and improving drainage along Foxwood Drive

Table 9.20-17. Status of Previous Mitigation Actions

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
SP-1	Flood Prone Road Mitigation Measures	Flood, Severe Storm	County Highway Dept, AKRF engineering	Flood prone roads can inhibit emergency response and evacuation during a flood. Develop specific mitigation solutions for flood prone road systems (roads, bridges, intersections, drainage, etc.) under the leadership of County Highway Dept. Projects should include the recommendations made in the 2014 Report on Coastal Vulnerability and Sea Level Rise (CV SLR Report), focusing on the following areas/infrastructure elements: Penny Bridge, Grassy Point Area, Cedar Pond Brook Interceptor	1. Discontinue 2. Initial review completed by AKRF, reviewed with Town and local residence, recommendations found infeasible due to cost and impacts to area residence, evaluation has now extended to the WWTF for hardening that infrastructure 2023- Town cleans roads, roadside soils, and culverts. Maintenance has been completed on a large stormwater basin in Town as well.	1. Discontinue 2. N/A 3. Initial review completed by AKRF, reviewed with Town and local residence, recommendations found infeasible due to cost.
SP-2	Staff Training	Flood, Severe Storm	DPW, Town Supervisor	Staff is inadequately trained. Require staff involved in floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs). Also, assign a Town staff member involved in an emergency management role to further facilitate and continuously update the Climate Smart Resiliency Planning Evaluation Tool.	1. Complete 2. Town engineer is a certified CFM Building official (CEO) has been assigned to emergency management coordination 2023- The Town Engineer is still certified, and the Building Inspector has various FEMA Certifications.	1. Discontinue 2. Not Applicable 3. Town engineer is a certified CFM Building official (CEO) has been assigned to emergency management coordination 2023- The Town Engineer is still certified, and the Building Inspector has various FEMA Certifications.

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
SP-3	Update Town Codes	All hazards	Building Department, County Planning	<p>Current codes and ordinances may not thoroughly incorporate natural disaster mitigation considerations.</p> <p>Code update: review existing local codes and ordinances against the identified hazards to determine whether there needs to be any amendments to address identified hazards and, where a need is identified; modify/amend the codes/ordinances as applicable. Reference Recommendation 2, 8, 10, and 17 from the 2014 Report on Coastal Vulnerability and Sea Level Rise (CV SLR).</p>	<p>1. Ongoing Capability</p> <p>2. Building department continually reviews codes for required updates and changes, Town Board recently adopted more stringent flood zone mapping 2023- Town may consider completing a Comprehensive Plan to aid in updating the coding.</p>	<p>1. Discontinue</p> <p>2. N/A</p> <p>3. Building department continually reviews codes for required updates and changes, Town Board recently adopted more stringent flood zone mapping 2023.</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
SP-4	Letchworth Town Disaster Recovery and Communications Center	All hazards	Building Dept., County Emergency Management	<p>Need for emergency/disaster recovery center.</p> <p>Set up a short-term emergency/disaster recovery center, a cooling center, and an Emergency Operations Command Center (EOCC). The RHO* Building would serve as the emergency/disaster recovery center and be a central processing location for all residents in need of assistance during and after disaster events. The Police Station would serve as a flexible communications command center to accommodate a variety of emergencies, and to coordinate the activities of all emergency responders in real time, mainly through radio communications and internet connections.</p>	<p>1. In Progress</p> <p>2. Town board determined the Patriot Hills Community Center would better service this intent and removed the designation from the RHO Building.</p>	<p>1. Include</p> <p>2. Revise to include needed updates to the Patriot Hills Community Center to make it a viable emergency center.</p> <p>3. Not Applicable</p>
SP-5	Hardening of Wastewater Treatment Plant	Flood	Town DPW	<p>Flood damage to infrastructure and continuity of critical health and safety infrastructure operations.</p> <p>Hardening of Wastewater Treatment Plant – Project should account for flood elevations of 14 feet given the remaining usable life of the treatment plant and protected to the 500-year event or worst-case scenario. (From 2014 CV SLR Report).</p>	<p>1. In Progress</p> <p>2. Town board and NYR developing plan to harden plant facilities, currently under design by AKRF and Town expects report/recommendations shortly 2023- The Town has been updating the plant with the goal of having the clarifiers and tanks all raised by 2025. Town still wants to harden the overall building as well.</p>	<p>1. Include</p> <p>2. Using reports and recommendations from AKRF, harden the wastewater treatment plant.</p> <p>3. Not Applicable</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
SP-6	Rehabilitation of Wastewater Interceptors along Beach Road and the Ba Mar Sewer Line	Flood	Town DPW	<p>Flood damage to infrastructure and continuity of critical health and safety infrastructure operations.</p> <p>Complete replacement of 20 manhole covers and installation of 20 vents to prevent storm and tidal water intrusion into the sewer lines will eliminate sewerage overflow along Beach Road, in the Ba Mar Mobile Home Park and into the environment.</p>	<p>1. Complete</p> <p>2. The Town has completed several manhole cover replacements All properties in BaMar Mobile Home Park have been raised.</p>	<p>1. Discontinue</p> <p>2. Not Applicable</p> <p>3. The Town has completed several manhole cover replacements All properties in BaMar Mobile Home Park have been raised.</p>
SP-7	Implement project recommendations of the Stony Point Culvert Prioritization	Flood, Severe Storm	Town, Rockland County Soil and Water Conservation District	<p>Flood damage to infrastructure and continuity of critical health and safety infrastructure operations.</p> <p>Implement project recommendations of the Stony Point Culvert Prioritization. According to Rockland County Soil and Water Conservation District, there are 10 highly ranked crossings in the Town to right-size. The District and other partners would like to see 2 crossings and a dam right sized/ will continue to apply for implementation funding for this in the future.</p>	<p>1. In Progress</p> <p>2. Property & Infrastructure design completed and Town Board currently pursuing grant monies to implement culvert replacements/upgrades 2023-Town is pursuing monies through MS4 grant.</p>	<p>1. Include</p> <p>2. Keep as is</p> <p>3. Not Applicable</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
SP-8	Update the Local Waterfront Revitalization Plan	All hazards	CPG member; Town Planning, County Planning	<p>Current LWRP does not thoroughly incorporate natural disaster mitigation considerations.</p> <p>Update the Local Waterfront Revitalization Plan (1994) and ensure it addresses sea level rise and coastal storms. The current Plan is dated both from a goal and from a resiliency standpoint. Updating the plan could make the Town eligible for additional public funding of resiliency infrastructure projects. (From 2014 CV SLR Report).</p>	<p>1. No Progress</p> <p>2. Town Board currently pursuing pricing from consultants to updates and would expect to have the project awarded later this year 2023- Received grant monies but unable to meet match funds.</p>	<p>1. Include</p> <p>2. Keep as is</p> <p>3. Not Applicable</p>
SP-9	Conduct emergency planning and become a NOAA Storm-ready community	All hazards	Town, Rockland County	<p>Town currently does not have storm an emergency response and short-term recovery plan or a storm evacuation plan and is not a Storm-ready community.</p> <p>Plan for storm preparedness and recovery including becoming a NOAA Storm-ready community; developing a storm emergency response and short-term recovery plan; and developing a storm evacuation plan. (From 2014 CV SLR Report)</p>	<p>1. No Progress</p> <p>2. Town board currently pursuing appointing town staff personnel to head up this portion of the project 2023- Town relies on the County for guidance related to storm emergency response and short-term recovery plans.</p>	<p>1. Include</p> <p>2. Keep as is</p> <p>3. Not Applicable</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
SP-10	Hazard Outreach	All hazards	Town of Stony Point, Rockland County	<p>Need for more public understanding of natural hazards and associated risks.</p> <p>Engage local schools and colleges to promote further public outreach and education in the community with respect to natural hazard risk management.</p>	<p>1. In Progress</p> <p>2. Town has coordinated with local seniors to shadow town engineer and building departments to review both hazard mitigation and typical requirements of town staff and officials 2023- Through the Rockland County Stormwater Consortium and Cornell University the Town has been participating in various public outreach. In addition, during the LWRP process, the public was highly engaged.</p>	<p>1. Include</p> <p>2. Keep as is</p> <p>3. Not Applicable</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
SP-11	Privately Owned Critical Facilities in Floodplain	Flood	Private owners with Town of Stony Point, Rockland County support	<p>Cedar Brook Homes Well and the Marvello Country Club Well #1 are critical facilities and located in the floodplain and identified as potentially vulnerable to future flood events. Critical facilities located in the floodplain are not only susceptible to flood damage but also create unnecessary complications for the municipality during an emergency event and post-disaster recovery.</p> <p>The Town will notify the facility managers/operators of the Cedar Brook Homes Well and Marvello Country Club Well #1 they are potentially vulnerable to flooding as identified during the Rockland County HMP update and advise of mitigation actions for consideration and funding sources for implementation. The Town does not have jurisdiction over these facilities. The Town will also inform the owners that NYS requires critical facilities be mitigated to protect to the 500-year flood event or "worst damage scenario". The property owners will need to determine the feasible and cost-effective mitigation actions.</p>	<p>1. In Progress</p> <p>2. Town issued letters to private property owners identified 2023- The Marvello Country Club was replaced by the Virgin Mary & St. Pachomius Coptic Orthodox Church who completed various improvements to the property including drainage and fire suppression. The Town is not aware of any improvements made to or around the Cedar Brook Homes Well.</p>	<p>1. Include</p> <p>2. Remove Marvello Country Club from action but keep the Cedar Brooks Home Well.</p> <p>3. Not Applicable</p>

Proposed Hazard Mitigation Initiatives for the HMP Update

Stony Point participated in the mitigation strategy workshop for this HMP to identify appropriate actions to include in a local hazard mitigation strategy. Its comprehensive consideration of all possible activities to address hazards of concern included review of the following FEMA documents:

- FEMA 551 “Selecting Appropriate Mitigation Measures for Floodprone Structures” (March 2007)
- FEMA “Mitigation Ideas—A Resource for Reducing Risk to Natural Hazards” (January 2013).

The action worksheets included at the end of this annex list the mitigation actions that Stony Point would like to pursue in the future to reduce the effects of hazards. The actions are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in the Town’s priorities.

Table 9.20-18 indicates the range of proposed mitigation action categories. The four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table to further demonstrate the wide range of activities and mitigation measures selected.

Volume I identifies 14 evaluation criteria for prioritizing the mitigation actions. To assist with rating each mitigation action as high, medium, or low priority, a numeric rank is assigned (-1, 0, or 1) for each of the evaluation criteria. Table 9.20-19 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Table 9.20-18. Analysis of Mitigation Actions by Hazard and Category

Hazard	Actions That Address the Hazard, by Action Category									
	FEMA				CRS					
	LPR	SIP	NSP	EAP	PR	PP	PI	NR	SP	ES
Dam Failure	6	1	-	2	6	2	2	-	-	5
Disease Outbreak	5	1	-	2	5	2	2	-	-	4
Drought	5	1	-	2	5	2	2	-	-	4
Earthquake	5	2	-	2	5	3	2	-	1	4
Extreme Temperature	5	1	-	2	5	2	2	-	-	4
Flood	7	5	-	3	7	6	2	-	3	6
Landslide	5	2	-	2	5	3	2	-	1	4
Severe Weather	6	3	-	3	6	4	2	-	1	5
Severe Winter Weather	5	2	-	2	5	3	2	-	1	4
Wildfire	5	2	-	2	5	3	2	-	1	4

Local Plans and Regulations (LPR)—These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.

Structure and Infrastructure Project (SIP)—These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct structures to reduce the impact of hazards.

Natural Systems Protection (NSP)—These are actions that minimize damage and losses and preserve or restore the functions of natural systems.

Education and Awareness Programs (EAP)—These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities

Preventative Measures (PR)—Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.

Property Protection (PP)—These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.

Public Information (PI)—Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.

Natural Resource Protection (NR)—Actions that minimize hazard loss and preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.

Structural Flood Control Projects (SP)—Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.

Emergency Services (ES)—Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities

Table 9.20-19. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Other Community Objectives	Total	High / Medium / Low
2024-StonyPointT-01	Dam Owner Partnership	1	1	1	0	0	0	0	1	0	0	1	0	1	0	6	Low
2024-StonyPointT-02	Critical Facilities in the Floodplain	1	1	1	1	1	0	0	1	1	0	1	1	1	0	10	Medium
2024-StonyPointT-03	Emergency Operations Plan Update	1	1	1	1	1	1	0	1	1	1	0	1	0	1	11	High
2024-StonyPointT-04	Socially Vulnerable Populations Outreach	1	0	1	1	1	1	0	1	1	1	1	1	1	1	12	High
2024-StonyPointT-05	Repetitive and Severe Repetitive Loss Properties	1	1	1	1	1	0	1	1	1	1	1	1	0	1	12	High
2024-StonyPointT-06	Comprehensive Plan	1	1	1	1	1	1	0	1	1	1	0	1	0	1	11	High
2024-StonyPointT-07	Patriot Hills Building Upgrades	0	1	1	0	0	0	0	1	1	1	0	0	1	0	6	Low
2024-StonyPointT-08	Hardening of Wastewater Treatment Plant	0	1	1	1	1	0	0	1	1	1	1	0	1	1	10	Medium
2024-StonyPointT-09	Stony Point Culvert Prioritization Implementation	1	1	1	1	1	0	1	1	1	1	1	1	1	0	12	High
2024-StonyPointT-10	Update the Local Waterfront Revitalization Plan	0	1	1	1	1	1	0	1	1	1	1	1	0	1	11	High
2024-StonyPointT-11	Storm Ready Program Participation	1	1	1	1	1	1	0	1	1	1	1	1	1	0	12	High
2024-StonyPointT-12	Short-Term Response and Recovery Plan	1	1	1	1	1	1	0	1	1	1	1	1	1	0	12	High
2024-StonyPointT-13	Evacuation Plan Development	1	0	1	1	1	1	0	1	1	1	1	1	0	1	11	High
2024-StonyPointT-14	Public Education and Outreach	1	1	1	1	1	1	0	1	1	1	1	1	1	1	13	High

Note: Volume I, Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14).

Action 2024-Stony PointT-01. Dam Owner Partnership

Action Name:	2024-StonyPointT-01. Dam Owner Partnership		
Description of the Problem:	There are multiple dams (Ambrey Pond Dam, Doodletown Brook R R Dam, Lake Boyce Dam, Stony Point Dam), which are critical facilities, located in the 1- and 0.2-percent flood hazard areas. The Town also has potential impacts from a high-hazard potential dam, the Lake Welch Dam. that contain or are adjacent to existing residential areas. The municipality does not own all the dams in its jurisdictions and cannot itself implement mitigation actions to the structures.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	Work with the owners of the dams to ensure inspections and safety procedures are up to date. Work with the dam owners to identify mitigation actions to ensure the integrity of the dams and that it is protected up to the 0.2-percent flood hazard area.		
Lead Agency:	Town Supervisor		
Supporting Agencies:	Town Administration, Dam Owners, NYSDEC		
Estimated Cost:	Low		
Potential Funding Sources:	Private Owners		
Implementation Timeline:	Within 5 years		
Goals Met:	1, 2, 3, 5		
Benefits:	This action will improve the safety and security of those who live within the dam inundation areas of the dams and increase the resilience of responding agencies. It will also increase communication between the municipality and the dam owners, which can be important during hazard events or other emergencies.		
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	The action will result in better preparedness within the Special Flood Hazard Area and inundation areas where significant risk to socially vulnerable populations exist.		
Impact on Critical Facilities/Lifelines:	Dams are considered a critical facility. This action will create an understanding of the safety procedures in place for each identified dam.		
Impact on Capabilities	This action will improve planning and response capabilities through the understanding of responsibilities and procedures.		
Impact on Future Development:	Depending on the result of this partnership, future development near the dams may be provided with better protection from dam failure events due to improved procedures and communication, as well as any physical improvements to the structures.		
Climate Change Considerations:	Climate change may result in an increase in the frequency and severity of weather-related disaster events, which may contribute to the likelihood of a dam failure event. This action will increase the capabilities to respond to these events.		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input type="checkbox"/> Medium	<input checked="" type="checkbox"/> Low

Alternatives	Action	Evaluation
	No Action	Town will be unaware of any safety concerns for the dam or its condition
	Utilize information from NYSDEC	Owners may not be required to submit a safety plan to the State
	Utilize information from the National Inventory of Dams	Not all dams are listed on the inventory

Action 2024-Stony PointT-02. Critical Facilities in the Floodplain

Action Name:	2024-StonyPointT-02. Critical Facilities in the Floodplain	
Description of the Problem:	The Village has critical facilities, such as the Cedar Brook Homes Well and Marvello Country Club Well #1, located in the floodplain. These facilities are exposed to flood events and may be vulnerable to damage, service interruptions, or other adverse impacts during or following a flood. The municipality does not own all the facilities in its jurisdictions and cannot itself implement mitigation actions to the structures.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	Coordinate with the facility managers at the Belle Harbor Marina, Pennybridge Marine Sales, Stony Point Bay Corp/Cannon Ball Yacht Club, and Cedar Brooks Homes to support the mitigation of vulnerable structures via retrofit (e.g. elevation, flood-proofing) or relocation to protect structures from future damage. Phase 1: Identify most cost-effective mitigation option Phase 2: Work with facility manager to implement selected action based on available funding and local match ability.	
Lead Agency:	Floodplain Administrator	
Supporting Agencies:	Town Administration, Facility Managers	
Estimated Cost:	High	
Potential Funding Sources:	FEMA BRIC, HMGP, Town Budget, Private Owners	
Implementation Timeline:	5 years	
Goals Met:	1, 2, 3	
Benefits:	This action will remove or reduce critical facility and community lifeline vulnerability to the flood hazard and remove or reduce safety risks for first responders.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Retrofitting or relocating the identified structures will benefit socially vulnerable populations, as individuals within these populations rely on resources from various government facilities, transportation facilities, and medical and senior care facilities.	

Impact on Critical Facilities/Lifelines:	Noting the number of facilities located within the flood hazard area may encourage the consideration of relocating critical facilities and lifelines from the flood hazard area and deter the development of any additional facilities in the flood hazard area.		
Impact on Capabilities	This action will enhance the Town’s current NFIP capabilities.		
Impact on Future Development:	Noting the number of facilities located within the flood hazard area may encourage the consideration of relocating critical facilities and lifelines from the flood hazard area and deter the development of any additional facilities in the flood hazard area.		
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events. As sea level rises due to climate change, the area of the flood hazard may expand.		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem continues
	Floodproof existing structures		May not necessarily reduce risk
	Construct floodwalls to stop flood issues		Will most likely interrupt natural floodplain function

Action 2024-Stony PointT-03. Emergency Operations Plan Update

Action Name:	2024-StonyPointT-03. Emergency Operations Plan Update		
Description of the Problem:	The Town’s current Emergency Operations Plan (EOP) has not been updated since 2011 and does not contain up to date information on risk to dam/levee failures, disease outbreaks, droughts, earthquakes, extreme temperature, floods, landslides, severe storms, sever winter storms, or wildfires. This information		
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire	
Description of the Solution:	The Town will update the EOP. Ensure that the EOP incorporates hazard mitigation techniques through a courtesy review or draft plans by the County Planning Department.		
Lead Agency:	Town Supervisor		
Supporting Agencies:	Town Administration, Rockland County		
Estimated Cost:	Low		
Potential Funding Sources:	Town Budget, EMPG		
Implementation Timeline:	Within 2 years		
Goals Met:	1, 3, 5		
Benefits:	The EOP details what the Town will do during a disaster (incident command implementation, command center location and activities, specific plans by department, etc.). Updating the EOP will permit the Town to integrate new plans, policies, capabilities, and hazard assessments.		

Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	The section overview portion of the EOP covers a discussion of a variety of topics, including population distribution and locations, including any concentrated populations of individuals with disabilities, others with access and functional needs, or individuals with limited English proficiency.	
Impact on Critical Facilities/Lifelines:	The section overview portion of the EOP covers a discussion of a variety of topics, including vulnerable critical facilities (e.g. nursing homes, schools, hospitals, infrastructure).	
Impact on Capabilities	This action will update an already existing planning capability of the Town.	
Impact on Future Development:	Future development will be protected by the EOP.	
Climate Change Considerations:	The update of this plan will ensure hazard mitigation is integrated into the EOP and provide discussions on how projected climate impacts are anticipated to exacerbate the identified risks.	
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No action	Current problem remains
	Integrate hazard mitigation principles in only hazard appendices	The plan will miss integration opportunities in the basic plan and annexes
	Ask County to integrate hazard mitigation into the County EOP	Town EOP still remains unintegrated

Action 2024-Stony PointT-04. Socially Vulnerable Populations Outreach

Action Name:	2024-StonyPointT-04. Socially Vulnerable Populations Outreach	
Description of the Problem:	The Town does not have any organizations that conduct outreach to socially vulnerable populations and underserved populations. During hazard events, the public may need to quickly access information about evacuation routes and shelters, or other steps they can take to protect themselves and their property. Residents may also need information about what services are available or offline due to flooding from intense precipitation, dam failure, severe storms, and snow melt; where to receive a vaccination or other healthcare in the event of a disease outbreak; public cooling or heat centers, such as libraries, during extreme temperatures; and evacuation areas for earthquakes, landslides, and wildfires. Socially vulnerable and underserved populations may rely on these types of services more heavily than other segments on the population. Furthermore, they may be less able to access these resources due to a variety of potential obstacles, such as mobility issues or language barriers.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	Create outreach materials, or utilize those from Rockland County, on hazard risks for socially vulnerable populations. Methods of distribution may include Town events, the Town newsletters, social media, the Town website, and having the materials on display for the public at Town libraries and offices. Consider hiring staff to work directly with socially vulnerable populations.	

Lead Agency:	Township Administration		
Supporting Agencies:	Rockland County		
Estimated Cost:	Low		
Potential Funding Sources:	Town Budget, HMGP		
Implementation Timeline:	Within 3 years		
Goals Met:	1, 3, 5		
Benefits:	This action will ensure there is an individual working to identify and work with the socially vulnerable populations in the Town. Furthermore, this action will create opportunities to educate and inform populations on hazard risks.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR)	<input type="checkbox"/> Natural Systems Protection (NSP)	
	<input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input checked="" type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR)	<input type="checkbox"/> Natural Resource Protection (NR)	
	<input type="checkbox"/> Property Protection (PP)	<input type="checkbox"/> Structural Flood Control Projects (SP)	
	<input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	Socially vulnerable populations in the Town will become educated on hazards risks. The Town will identify an individual to identify and work with these populations to ensure the most up to date information is being shared.		
Impact on Critical Facilities/Lifelines:	Educating populations on hazard risk and how to mitigate the risks can decrease the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.		
Impact on Capabilities	This action would build upon the Village’s already existing public education and outreach program.		
Impact on Future Development:	N/A		
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related disaster events. This action will inform residents and business owners of how to reduce risk from hazards and how climate change may exacerbate those risks.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current methods remain the only ones used
	Rely on state or federal resources		Resources may be generalized and not specific to the risks in the Town
	Use only a few methods for distribution		Using only a few methods of distribution may hinder socially vulnerable populations from receiving the guidance

Action 2024-Stony PointT-05. Repetitive and Severe Repetitive Loss Properties

Action Name:	2024-StonyPointT-05. Repetitive and Severe Repetitive Loss Properties		
Description of the Problem:	There are two Repetitive Loss properties in the Town. These properties exhibit elevated vulnerability and may face increasing risks to flood damage due to changes in precipitation intensity and frequency, raising the possibility for these properties to become Repetitive/Severe Repetitive Loss Properties. These properties may require a disproportionate amount of municipal resources after hazard events if they are damaged.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The Town will promote and support non-structural flood hazard mitigation alternatives for at risk properties within the floodplain, including those that have been identified as Repetitive Loss (RL) and Severe Repetitive Loss (SRL), such as acquisition/relocation or elevation depending on feasibility. The parameters for this initiative would be funding, benefits versus cost, and willing participation of property owners.		
Lead Agency:	Floodplain Administrator		
Supporting Agencies:	Rockland County		
Estimated Cost:	Medium		
Potential Funding Sources:	FEMA FMA, FMA SWIFT, Town Budget, County Budget, Property Owners		
Implementation Timeline:	3 years		
Goals Met:	1, 2, 3		
Benefits:	This action would foster comprehensive floodplain management by removing at risk properties from the flood hazard area or elevating properties to reduce the flood risk.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	Socially vulnerable populations may be able to have houses elevated or acquired when it would otherwise be unaffordable.		
Impact on Critical Facilities/Lifelines:	Removing structures from the floodplain decreases the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.		
Impact on Capabilities	This action will enhance the Town’s current NFIP capabilities.		
Impact on Future Development:	Increased outreach to homeowners within a flood prone area will limit construction in areas that are prone to hazard events. Homes may be acquired, which will remove those structures from the floodplain and prevent future development on those sites.		
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low

Alternatives	Action	Evaluation
	No action	Current problem continues
	Construct flood walls/barriers around vulnerable areas	Costly and can divert floodwaters to other areas
	Deployable flood barriers for vulnerable areas	Requires a great deal of work to implement prior to each event

Action 2024-Stony PointT-06. Comprehensive Plan

Action Name:	2024-StonyPointT-06. Comprehensive Plan	
Description of the Problem:	The Town does not have a comprehensive plan. This type of plan sets goals and identified issues that the Town wants to address over the plan’s duration. Without a comprehensive plan, the Town does not have a strategy to streamline the consideration of the following hazards into its future development and growth: dam/levee failure, disease outbreak, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, or wildfire.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	The Town will write a comprehensive plan. Ensure that the local comprehensive plan incorporates hazard mitigation techniques through a courtesy review or draft plans by the County Planning Department.	
Lead Agency:	Town Planner	
Supporting Agencies:	Town Administration, Town Planning Board, Rockland County	
Estimated Cost:	Staff time, Low	
Potential Funding Sources:	Town Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 5, 6, 7	
Benefits:	This action will have the Town update its comprehensive plan, which has not been updated in many years. The integration of hazard mitigation principles will present the opportunity for the Town to identify areas of the Town which may be impacted by hazards and plan for future land use accordingly.	
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	The inclusion of hazard mitigation principles into the comprehensive plan may include discussions on how hazard risks may impact socially vulnerable populations in the Town.	
Impact on Critical Facilities/Lifelines:	Updating the comprehensive plan to include hazard mitigation principles may present an opportunity to discuss hazard risks to critical facilities and lifelines in the Town.	

Impact on Capabilities	This action will produce a planning capability for the Town, making it more resilient.		
Impact on Future Development:	This action will have a direct impact on future land use in the Town, as the comprehensive plan guides land use principles in the Town.		
Climate Change Considerations:	As impacts from climate change are increasingly felt, the contents in the Town’s comprehensive plan will need to be updated.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem remains
	Integrate hazard mitigation principles in only plan elements		The plan will miss integration opportunities in the comprehensive plan main document
	Integrate hazard mitigation principles in only comprehensive plan main document		The plan will miss integration opportunities in the plan elements

Action 2024-Stony PointT-07. Patriot Hills Building Upgrades

Action Name:	2024-StonyPointT-07. Patriot Hills Building Upgrades		
Description of the Problem:	The Patriot Hills building is the designated emergency center for the Town. However, the building does not meet all the requirements of viable emergency center to serve residents during dam/levee failures, disease outbreaks, droughts, earthquakes, extreme temperatures, floods, landslides, severe storms, severe winter storms, or wildfires.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire	
Description of the Solution:	The Town Board designated the Patriot Hills Building as designated emergency center. The Town will perform an analysis on needed building updates to ensure continuity of operations at the Patriot Hills building emergency center.		
Lead Agency:	Town Board		
Supporting Agencies:	Town Administration, Town Departments		
Estimated Cost:	High		
Potential Funding Sources:	FEMA BRIC, HMGP, Town Budget		
Implementation Timeline:	5+ years		
Goals Met:	1, 2, 5		
Benefits:	This action protects public health and safety and ensures continued operation of a critical facility and its essential functions during an emergency.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	

CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Socially vulnerable populations are often the most at-risk to hazards due to pre-existing conditions and socioeconomic status. Populations may not be able to evacuate during times of emergency and need a safe, nearby location to locate to.	
Impact on Critical Facilities/Lifelines:	This action protects public health and safety and ensures continued operation of a critical facility and its essential functions during an emergency.	
Impact on Capabilities	This action will review the current capabilities of the Patriot Hills Building and will enhance the capabilities of the emergency center to ensure continuity of operations.	
Impact on Future Development:	This action results in protection of a critical facility that could support future development.	
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related disaster events. Having an operable building with the proper equipment needed for continuity of operations will create a safe environment for those at risk.	
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input type="checkbox"/> Medium <input checked="" type="checkbox"/> Low
Alternatives	Action	Evaluation
	No action	Current problem remains
	Build a new facility with all needs	Cost prohibitive
	Use another government building	The space may be occupied or impacted by the emergency event

Action 2024-Stony PointT-08. Hardening of Wastewater Treatment Plant

Action Name:	2024-StonyPointT-08. Hardening of Wastewater Treatment Plant
Description of the Problem:	The wastewater treatment plant is at risk to impacts from earthquakes, floods, landslides, severe storms, severe winter storms, and wildfires. If impacted, the service area may experience interruptions in service that may be temporary or prolonged, depending on the severity.
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature <input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	Using reports and recommendations from AKRF, harden the wastewater treatment plant. The Town has been updating the plant with the goal of having the clarifiers and tanks all raised by 2025.
Lead Agency:	Town Administration
Supporting Agencies:	Engineering
Estimated Cost:	High
Potential Funding Sources:	FEMA BRIC, HMGP
Implementation Timeline:	5+ years

Goals Met:	2	
Benefits:	This action will remove or reduce critical facility and community lifeline vulnerability to natural hazards and remove or reduce safety risks for first responders.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Retrofitting the identified structure will benefit socially vulnerable populations, as individuals within these populations rely on services from the facility.	
Impact on Critical Facilities/Lifelines:	This action will remove or reduce critical facility and community lifeline vulnerability to natural hazards and remove or reduce safety risks for first responders.	
Impact on Capabilities	This action will protect a capability of the Town, which without would cause great detriment.	
Impact on Future Development:	This action results in protection of a critical facility that could support future development.	
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related disaster events. A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events. These occurrences may impact productivity at the wastewater treatment plant.	
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No action	Current problem remains
	Build a new facility	Cost prohibitive
	Floodproof existing structure	May not necessarily reduce risk

Action 2024-Stony PointT-09. Stony Point Culvert Prioritization Implementation

Action Name:	2024-StonyPointT-09. Stony Point Culvert Prioritization Implementation	
Description of the Problem:	There are 10 highly ranked culvert crossings in the Town that are at risk of overflowing due to their limited capacity and size. Undersized culverts elevate the risk for flooding to occur following intense precipitation or other severe storms.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	Implement project recommendations of the Stony Point Culvert Prioritization. According to Rockland County Soil and Water Conservation District, there are 10 highly ranked crossings in the Town to right-size. The property and infrastructure design has been completed and the Town Board is currently pursuing grant monies to implement culvert replacements/upgrades.	
Lead Agency:	Town Board	
Supporting Agencies:	Highway Department	

Estimated Cost:	High		
Potential Funding Sources:	MS4 Grant, Town Budget, FEMA BRIC, HMGP		
Implementation Timeline:	Within 3 years		
Goals Met:	1, 2, 5		
Benefits:	Overall flooding will be reduced, which will result in less frequency of road closures and reduced damage occurring to culverts and roadways during severe events. Businesses are likely to remain in place if they are able to remain open, or re-open sooner following a flood.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR)	<input type="checkbox"/> Natural Systems Protection (NSP)	<input type="checkbox"/> Education and Awareness Programs (EAP)
	<input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)		
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR)	<input type="checkbox"/> Natural Resource Protection (NR)	<input checked="" type="checkbox"/> Structural Flood Control Projects (SP)
	<input type="checkbox"/> Property Protection (PP)	<input type="checkbox"/> Emergency Services (ES)	
	<input type="checkbox"/> Public Information (PI)		
Impact on Socially Vulnerable Populations:	Areas that were previously vulnerable to frequency or severe flooding events will be less likely to be impacted by flooding events. Populations living in these areas will have fewer impacts due to flooding.		
Impact on Critical Facilities/Lifelines:	Transportation routes will be more likely to remain open, access to health and medical facilities will be maintained, both for healthcare workers and the population who requires treatment for injuries and illness, and stormwater management infrastructure will be better suited to handle flooding events.		
Impact on Capabilities	This action will upgrade the stormwater management capabilities of the Village.		
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.		
Climate Change Considerations:	Climate change is likely to result in more frequent and severe rainfall events. This action upsizes culvert sizes to meet changing stormwater needs as the result of climate change.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem remains
	Remove roadway		Roadway cannot be removed
	Install rain gardens		Rain gardens are unlikely to be able to absorb enough stormwater to prevent flooding during severe rainfall events.

Action 2024-Stony PointT-10. Update the Local Waterfront Revitalization Plan

Action Name:	2024-StonyPointT-10. Update the Local Waterfront Revitalization Plan
Description of the Problem:	The current Local Waterfront Revitalization Plan (LWRP) does not thoroughly incorporate hazard mitigation considerations for the following types of events: dam/levee failure, disease outbreaks, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, and wildfire

Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	Update the Local Waterfront Revitalization Plan (1994) and ensure it addresses sea level rise and coastal storms. The current Plan is dated both from a goal and from a resiliency standpoint. Updating the plan could make the Town eligible for additional public funding of resiliency infrastructure projects.	
Lead Agency:	Town Administration	
Supporting Agencies:	Town Board	
Estimated Cost:	Medium	
Potential Funding Sources:	Town Budget, FEMA BRIC, NYS Environmental Protection Fund	
Implementation Timeline:	Within 4 years	
Goals Met:	1, 2, 3, 4, 5, 6, 7	
Benefits:	Updating the LWRP will benefit the entirety of the Town. The update will include hazard mitigation principles, updated inventory of development along the waterfront, new waterfront policies and recommendations, and will help leverage potential funding opportunities.	
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Populations living along the waterfront will benefit from this plan update, as it will identify new projects and proposed uses which will benefit the area.	
Impact on Critical Facilities/Lifelines:	Incorporating hazard mitigation principles into the LWRP will ensure critical facilities and lifelines are being considered not only as waterfront resources, but as properties and infrastructure which may need to be protected by hazard impacts, such as flooding, severe weather, and severe winter weather events.	
Impact on Capabilities	This action will update an already existing planning capability of the Town, making it more resilient.	
Impact on Future Development:	The update will identify new waterfront policies and recommendations that will serve as a guide for future development and infrastructure improvements and will help leverage potential funding opportunities.	
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events. Sea level rise associated with climate change may cause water levels in the Hudson River to increase.	
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium
		<input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No action	Current problem remains
	Write plan without consulting primary stakeholders	Input may be biased and incomplete

Action 2024-Stony PointT-11. Storm Ready Program Participation

Action Name:	2024-StonyPointT-11. Storm Ready Program Participation	
Description of the Problem:	The National Weather Service (NWS) provides a certification called StormReady to locales that adopt certain weather preparedness principles and planning to improve local capabilities to prepare and response to floods and severe storms. The Town does not participate in NOAA’s StormReady program.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Town will coordinate with the local NWS office to complete all necessary requirements to become a StormReady community.	
Lead Agency:	Town Supervisor	
Supporting Agencies:	Town Administration, Rockland County, NWS	
Estimated Cost:	Low	
Potential Funding Sources:	Town Budget	
Implementation Timeline:	3 years	
Goals Met:	1, 2, 3, 5	
Benefits:	StormReady is a nationwide program that helps communities better protect their citizens during severe weather. The program encourages communities to take a proactive approach to improving local hazardous weather operations. StormReady provides emergency managers with clear-cut guidelines on how to improve their hazardous weather operations. Community Rating System (CRS) points will become available that can reduce flood insurance premiums for home and business owners.	
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	To become a participant in the StormReady program, a community must have more than one way to receive severe weather warnings and forecasts and to alert the public. Increasing methods of communication to socially vulnerable populations can assist in the safety and security of residents.	
Impact on Critical Facilities/Lifelines:	Being a part of the StormReady program would result in improved critical facility readiness.	
Impact on Capabilities	Improves coordination between emergency managers, NWS personnel, and members of the community to develop and issue timely and effective warnings ahead of severe weather events. StormReady requires participation in regular exercises to test and demonstrate readiness for severe weather events.	
Impact on Future Development:	This action will result in increased warning system capabilities for all current and future development.	
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related disaster events. This action will increase emergency response capabilities to increasing storm risks.	

Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No Action		The Town does not participate in the Storm Ready Program
	Complete half of the program requirements		The Town would not be eligible to participate in the Storm Ready Program
	Participate in the program, but do not utilize resources		The Town would miss opportunities to strengthen communication and safety skills

Action 2024-Stony PointT-12. Short-Term Response and Recovery Plan

Action Name:	2024-StonyPointT-12. Short-Term Response and Recovery Plan	
Description of the Problem:	The Town does not have a short-term response and recovery plan to guide how it responds and prioritizes recovery efforts after a dam/levee failure, disease outbreak, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, or wildfire.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	Utilizing guidance from Rockland County, develop a short-term response and recovery plan.	
Lead Agency:	Town Administration	
Supporting Agencies:	Rockland County	
Estimated Cost:	Medium	
Potential Funding Sources:	Town Budget, EMGP	
Implementation Timeline:	Within 4 years	
Goals Met:	1, 2, 3, 5, 7	
Benefits:	This plan will focus on short-term response and recovery following a hazard event. The plan will focus on addressing immediate needs following the emergency, including activities such as restoration of critical functions and vital resources, damage assessment, debris removal, power restoration, and providing temporary housing.	
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	A short-term response and recovery plan will address how the Town will assist its populations immediately following an emergency. This may include providing temporary housing, cleaning debris, assessing properties for damage, providing cooling or heating centers, and providing resources to ensure safety and security.	

Impact on Critical Facilities/Lifelines:	Short-term response and recovery focus on the restoration of critical functions and vital resources for the community. The plan will identify the roles and responsibilities of responding agencies.		
Impact on Capabilities	This action will produce a planning capability for the Town, making it more resilient.		
Impact on Future Development:	Future development will be protected by the short-term response and recovery plan.		
Climate Change Considerations:	The update of this plan will ensure hazard mitigation is integrated into the EOP and provide discussions on how projected climate impacts are anticipated to exacerbate the identified risks.		
Priority: Check one	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem remains
	Write a long-term response and recovery plan		Short-term response and recovery will not be discussed
	Write individual plans for all aspects of the short-term response and recovery plan		The Town will need to ensure all plans all integrated and nest appropriately

Action 2024-Stony PointT-13. Evacuation Plan Development

Action Name:	2024-StonyPointT-13. Evacuation Plan Development	
Description of the Problem:	Residents may be required to evacuate the Town in the event of a dam/levee failure, earthquake, flood, landslide, severe storm, severe winter storm, or wildfire. The Town does not have designated routes for evacuations.	
Hazard(s) of Concern: Check all that apply	<input checked="" type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	The Town will work with surrounding jurisdictions and Rockland County to determine best possible evacuation routes. These routes will then be incorporated into emergency operations and evacuation plans.	
Lead Agency:	Town Supervisor	
Supporting Agencies:	Town Administration, Surrounding Jurisdictions, Rockland County	
Estimated Cost:	Medium	
Potential Funding Sources:	Town Budget, EMGP, County Budget	
Implementation Timeline:	4 years	
Goals Met:	1, 3, 5, 7	
Benefits:	Evaluating evacuation routes with surrounding jurisdictions ensures continuity during implementation. Furthermore, identifying routes which are not impacted, or have limited impact, to hazards, such as flood, prevent additional loss or damages.	

Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Having pre-determined evacuation routes can assist socially vulnerable populations in preparing themselves and those within their community to evacuate in a safe, timely fashion.	
Impact on Critical Facilities/Lifelines:	Identifying evacuation routes can assist in smooth transportation operations across multiple jurisdictions.	
Impact on Capabilities	This action will produce a planning capability for the Town, making it more resilient.	
Impact on Future Development:	Future development would need to be built with access to the identified evacuation routes.	
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events. Sea level rise associated with climate change may cause water levels in the Hudson River to increase. This action helps to plan for future hazard events.	
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No Action	Current problem remains
	Do not consult surrounding municipalities	Evacuation routes may go against one another
	Do not publicize routes	Residents will not be aware of the evacuation routes

Action 2024-Stony PointT-14. Public Education and Outreach

Action Name:	2024-StonyPointT-16. Public Education and Outreach	
Description of the Problem:	The Town currently does not have a comprehensive education and outreach program. The Town residents are not aware of hazards that they are exposed to and what can be done to further protect themselves and their properties from damages. The hazards that the Town is at risk for include dam/levee failure, disease outbreak, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, and wildfire.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	Develop and enhance the public awareness program on hazards, prevention, and mitigation. Continue to work with Rockland County on their program that provides information to the municipalities.	
Lead Agency:	Town Supervisor	
Supporting Agencies:	Town Administration, Rockland County, Rockland County Stormwater Consortium, Cornell University	
Estimated Cost:	Low	

Potential Funding Sources:	Town Budget	
Implementation Timeline:	1 year	
Goals Met:	1, 2, 3, 5	
Benefits:	This action will improve the current public education and outreach program in the Town by including discussions on disaster preparedness and hazard mitigation to residents and business owners, which will contribute to the resiliency of the Town.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Socially vulnerable populations will learn how to prepare for and mitigate the various hazards which may impact them in the Town.	
Impact on Critical Facilities/Lifelines:	Businesses, which may be considered critical facilities or lifelines, would be more informed on how to prepare for emergency events and mitigate the risks of potential hazards. With these businesses becoming more resilient, this action would contribute to their continuity of operations. Engage local schools and colleges to promote further public outreach and education in the community with respect to hazard mitigation.	
Impact on Capabilities	This action would build upon the County’s already existing public education and outreach program and adapt it to the needs for the Town.	
Impact on Future Development:	N/A	
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related disaster events. This action will inform residents and business owners of how to reduce risk from hazards and how climate change may exacerbate those risks.	
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No action	Current methods remain the only ones used
	Rely on state or federal resources	Resources may be generalized and not specific to the risks in the Town
	Use only a few methods for distribution	Using only a few methods of distribution may hinder socially vulnerable populations from receiving the guidance

SECTION 9. JURISDICTIONAL ANNEXES

9.21 VILLAGE OF SUFFERN

This jurisdictional annex to the Rockland County Hazard Mitigation Plan (HMP) provides information to assist public and private sectors in the Village of Suffern with reducing losses from future hazard events. This annex is not guidance of what to do when a disaster occurs; its focus is on actions that can be implemented prior to a disaster to reduce or eliminate damage to property and people. The annex presents a general overview of the Village of Suffern, describes who participated in the planning process, assesses the Village’s risk, vulnerability, and capabilities, and outlines a strategy for achieving a more resilient community.

9.21.1 Hazard Mitigation Planning Team

The Village of Suffern identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Village departments. The Mayor represented the community on the Rockland County HMP Planning Partnership and Steering Committee and supported the local planning process requirements by securing input from persons with specific knowledge to enhance the plan. All departments were asked to contribute to the annex development through reviewing and contributing to the capability assessment, reporting on the status of previously identified actions, and participating in action identification and prioritization.

Table 9.21-1 summarizes Village officials who participated in the development of the annex and in what capacity. Additional documentation of the Village’s planning activities through Planning Partnership meetings is included in Volume I.

Table 9.21-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Michael Curely, Mayor Address: 61 Washington Avenue, Suffern NY 10901 Phone Number: (845) 357-2600 Email: mcurely@suffernny.gov	Name/Title: Charles Sawicki, Director of Public Works Address: 61 Washington Avenue, Suffern NY 10901 Phone Number: (845) 357-2602 Email: csawicki@suffernny.gov
National Flood Insurance Program Floodplain Administrator	
Name/Title: Charles Sawicki, Director of Public Works Address: 61 Washington Avenue, Suffern NY 10901 Phone Number: (845) 357-2602 Email: csawicki@suffernny.gov	
Additional Contributors	
Name/Title: Charles Sawicki, Director of Public Works Method of Participation: Completed mitigation strategy input, reviewed draft annex	
Name/Title: Danielle Curtin, Department of Public Works Clerk Method of Participation: Completed mitigation strategy input, completed action review, completed hazard event history and NFIP surveys, reviewed draft annex	
Name/Title: Michael Curely, Mayor Method of Participation: Reviewed draft annex	

9.21.2 Municipal Profile

The Village of Suffern is located along the southern border of the Town of Ramapo in Rockland County. It is approximately 2.1 square miles in size and bordered to the north by the Town of Ramapo and the Village of Montebello, to the south by New Jersey, to the east by the Village of Airmont and to the west by the Village of Hillburn (Rockland County 2018). Both the Ramapo River and Mahwah River flow through the Village. The Ramapo River Watershed encompasses the entire Village.

The New York State Thruway passes through the Village, as does I-287. The area is served by New Jersey Transit and Metro-North Railroad commuter lines which stop at the Suffern train station. Freight rail also passes through the Village.

Research has shown that some populations are at greater risk from hazard events because of decreased resources or physical abilities. These populations can be more susceptible to hazard events based on a number of factors including their physical and financial ability to react or respond during a hazard, and the location and construction quality of their housing. Data from the 2017-2021 American Community Survey indicates that 4.3 percent of the population is five years of age or younger, 20.4 percent is 65 years of age or older, 7.6 percent is non-English speaking, 6.2 percent is below the poverty threshold, and 9.7 percent is considered disabled.

9.21.3 Jurisdictional Capability Assessment and Integration

The Village of Suffern performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Volume I describes the components included in the capability assessment and their significance for hazard mitigation planning. The jurisdictional assessment for this annex includes analyses of the following:

- Planning and regulatory capabilities
- Development and permitting capabilities
- Administrative and technical capabilities
- Fiscal capabilities
- Education and outreach capabilities
- Classification under various community mitigation programs
- Adaptive capacity to withstand hazard events

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into day-to-day local government operations. As part of the hazard mitigation analysis, planning and /policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress toward plan integration. Development of an updated mitigation strategy provided an opportunity for the Village of Suffern to identify opportunities for integration of mitigation concepts that can be incorporated into municipal procedures.

Planning, Legal, and Regulatory Capability and Integration

Table 9.21-2 summarizes the regulatory tools that are available to the Village of Suffern.

Table 9.21-2. Planning, Legal, and Regulatory Capability and Integration

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Codes, Ordinances, & Regulations				
Building Code	Yes	Chapter 96 Building Construction and Fire Prevention	State, Local	Fire Inspector, Building Inspector, Code Enforcement Officer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The intent of this code is to prescribe minimum requirements necessary to establish a reasonable level of life safety and property protection from the hazards created by fire and explosion. This code is designed to supplement and expand upon the requirements of the New York State Uniform Fire Prevention and Building Code. Should there be a discrepancy between this code and the New York State Uniform Fire Prevention and Building Code, the more restrictive provision shall apply.				
Zoning/Land Use Code	Yes	Chapter 266 Zoning	Local	Zoning Board of Appeals, Code Enforcement Officer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Under the authority granted by § 7-700 of the Village Law as amended, §§ 10, Subdivision 1(ii)e, of the Municipal Home Rule Law and § 10, Subdivision 6, of the Statute of Local Governments, the Board of Trustees of the Village of Suffern hereby adopts this chapter, hereinafter referred to as the "Zoning Law," to promote the purposes set forth in § 7-704 of the Village Law. Among the stated purposes, the Zoning Law aims to reduce stormwater runoff that worsens flooding and to create a hospital climate for the pursuit of happiness. It has ordinances aiming to limit development in floodplains, protect wetlands, and to connect open spaces to the greatest extent possible.				
Subdivision Code	Yes	Chapter 239 Subdivision of Land	Local	Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> This ordinance is currently under review for possible revision and updating. The cluster technique shall be considered for all properties shown on the Critical Environmental Area Map adopted as part of the Zoning Law.				
Site Plan Code	Yes	Chapter 266 Zoning, Article X Site Plan Approval; Chapter 228 Site Plan Regulations	Local	Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Approval of a site plan by the Planning Board is required for the development or redevelopment of any property or structure for a new use, the expansion or relocation of any existing use or a change of use. In considering and acting upon site plans, the Planning Board shall take into consideration the recommendations of the Village Development Plan, the public health, safety and welfare, the comfort and convenience of the public in general and of the residents, employees, visitors, and patrons of the proposed development and of the immediate neighborhood in particular. The Planning Board considers several criteria, including the site's topography, adequate stormwater drainage systems to prevent periodic or continuous downstream flooding, and physical constraints imposed by natural resources, among others.				
Stormwater Management Code	Yes	Chapter 233 Stormwater Management	Local	Department of Public Works
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The purpose of this article is to establish minimum stormwater management requirements and controls to protect and safeguard the general health, safety, and welfare of the public residing within the Village of Suffern and to address the findings of fact in § 233-1 hereof. One of the stated objectives of the ordinance is to minimize increases in stormwater runoff rates and volumes from land development activities to reduce flooding and streambank erosion.				
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Real Estate Disclosure	Yes	New York State (NYS) mandate, Property Condition Disclosure Act, NY Code – Article 14 §460-467	State, Local	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The NYS mandate requires sellers to disclose to potential buyers whether their property is located in a designated floodplain.				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Growth Management	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Environmental Protection Ordinance	Yes	Chapter 266 Zoning, Article IV General Regulations	Local	Board of Trustees, Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The purpose of the Critical Environmental Area Overlay District is to provide an additional measure of review of development proposals on those remaining undeveloped and underdeveloped lands with sensitive environmental features, and to encourage flexibility in layout to best protect sensitive environmental features and to minimize adverse environmental impacts on neighboring properties or the Village as a whole. All uses in the Critical Environmental Area Overlay District require the issuance of a special permit by the Board of Trustees pursuant. The cluster technique shall be considered for all properties shown on the Critical Environmental Area Map adopted as part of the Zoning Law.				
Flood Damage Prevention Ordinance	Yes	Chapter 141 Flood Damage Prevention	Federal, State, Local	Director of Public Works
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The purpose of the Floodplain District is to protect the health, safety, and welfare of the inhabitants of the Village of Suffern from hazards due to periodic flooding. No structure (temporary or permanent), fill for any purpose, deposit, obstruction, storage of materials or equipment or other uses shall be permitted which, acting alone or in combination with existing or future uses, will adversely affect the efficiency or the capacity of the floodway or increase flood heights, cause increased velocities, or obstruct or otherwise catch or collect debris which will obstruct flow under flood conditions. If a proposed development lies in the floodway, the Planning Board will not grant a permit except if it shall not be habituated by humans, have low flood damage potential, minimizes obstruction to floodwater flood, be anchored to prevent floatation, and construct utilities above base flood elevation or to be floodproof. Development that lies in the fringe of the floodway ("flood fringe area") must meet additional requirements, including being built with one foot of freeboard.				
Wellhead Protection	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Emergency Management Ordinance(s)	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Climate Change Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other: Freeboard	Yes	Chapter 141 Flood Damage Prevention	State, Local	Director of Public Works
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> New York State requires new one- and two-family residences to be built with two feet of freeboard and all other construction types with one foot of freeboard. The Village's Floodplain District requires that any structure built on pilings or fill shall be constructed with the lowest floor elevated to at least one foot about the base flood elevation.				
Other: Cumulative Substantial Damage	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Planning Documents				
General/Comprehensive Plan	Yes	Village of Suffern Comprehensive Land Use Plan, 2023	Local	Village Clerk
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Village is currently developing a new Village-wide Comprehensive Plan pursuant to NYS Village Law §7-722, for the purposes of long-term land use planning and zoning analysis consistent with the suburban nature of existing uses throughout the Village. The new plan will include goals and policy recommendations to make the Village more sustainable and climate change resilient through such as building standards, renewable energy, stormwater management, water conservation, and waste minimization and natural landscape preservation.				
Capital Improvement Plan	Yes	Adopted Budgets FY Ending 2024	Local	Village Board, Finance Department
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The adopted budget includes a list of proposed capital projects for the Village of Suffern. These projects represent assets that have higher project costs and will ensure resource longevity. Listed projects may include emergency power generators, multiple trucks with plows, or infrastructure improvements.				
Disaster Debris Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Floodplain Management or Watershed Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Stormwater Management Plan	Yes	Stormwater Annual Report 2023	Local	Department of Public Works
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Stormwater Report records the efforts of the Department of Public Works to fulfill its Stormwater Management Program Plan goals throughout the calendar year. It includes observation such as how many violations occur annual, how many acres are disturbed due to construction, and identification of drainage facilities issues.				
Open Space Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Urban Water Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Habitat Conservation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Economic Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Community Wildfire Protection Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Community Forest Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Transportation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Agriculture Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Climate Action/ Resiliency/Sustainability Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Tourism Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Business/ Downtown Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other (for example NYRCR, etc.)	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Response/Recovery Planning				
Comprehensive Emergency Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Continuity of Operations Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Substantial Damage Response Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Threat & Hazard Identification & Risk Assessment	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> No				
Post-Disaster Recovery Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Public Health Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Other	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

Development and Permitting Capability

Table 9.21-3 summarizes the capabilities of the Village of Suffern to oversee and track development.

Table 9.21-3. Development and Permitting Capability

Indicate if your jurisdiction implements the following	Yes/No	Comment:
Do you issue development permits? <ul style="list-style-type: none"> If you issue development permits, what department is responsible? If you do not issue development permits, what is your process for tracking new development? 	Yes	Village of Suffern Building Department
Are permits tracked by hazard area? (For example, floodplain development permits.)	Yes	Floodplain development
Do you have a buildable land inventory? <ul style="list-style-type: none"> If you have a buildable land inventory, please describe 	No	-
Describe the level of build-out in your jurisdiction.	N/A	The Village is fully built out.

Administrative and Technical Capability

Table 9.21-4 summarizes potential staff and personnel resources available to the Village of Suffern and their current responsibilities that contribute to hazard mitigation.

Table 9.21-4. Administrative and Technical Capabilities

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
<i>Administrative Capability</i>		
Planning Board	Yes	The Planning Board reviews and grants approvals for site plans and subdivisions. They also make recommendations to the Zoning Board of Appeals and Town Board on various zoning and planning matters.
Zoning Board of Adjustment	Yes	The Zoning Board considers appeals for variances from the zoning ordinance, appeals of the Building Inspector, special permit applications and requests for zoning interpretations.
Planning Department	No	-
Mitigation Planning Committee	No	-
Environmental Board/Commission	No	-
Open Space Board/Committee	No	-
Economic Development Commission/Committee	No	-
Public Works/Highway Department	Yes	The Department of Public Works is responsible for the delivery of various Village services to the Public. Three main divisions make up the Department of Public Works: Street & Refuse, Water & Sewer and Waste Water Treatment.

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
Construction/Building/Code Enforcement Department	Yes	Building Department services include Building Inspection, Zoning Regulation, Code Enforcement, Fire Inspection, and Property Maintenance.
Emergency Management/Public Safety Department	Yes	The Suffern Fire Department, organized in 1900, is an all-volunteer organization, and divided into two Companies, Suffern Hook & Ladder Co #1 and the Volunteer Hose Co #1. The Suffern Police Department features a Patrol Division, Detective Bureau, K-9 Unit, Bicycle Patrol, DARE Unit and a Community Policing Unit.
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	Yes	Department of Public Works
Mutual aid agreements	Yes	Fire and Police Departments
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	No	-
Other	No	-
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Planner consultant
Engineers or professionals trained in building or infrastructure construction practices	Yes	Department of Public Works
Planners or engineers with an understanding of natural hazards	Yes	Planner consultant
Staff with expertise or training in benefit/cost analysis	Yes	Department of Public Works
Professionals trained in conducting damage assessments	Yes	Chief Building Inspector
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	No	-
Environmental scientist familiar with natural hazards	No	-
Surveyor(s)	No	-
Emergency Manager	Yes	Police Chief
Grant writer(s)	Yes	Consultant
Resilience Officer	No	-
Other (this could include stormwater engineer, environmental specialist, etc.)	No	-

Fiscal Capability

Table 9.21-5 summarizes financial resources available to the Village of Suffern.

Table 9.21-5. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use? (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	Yes

Financial Resources	Accessible or Eligible to Use? (Yes/No)
Capital improvements project funding	Yes
Authority to levy taxes for specific purposes	Yes
User fees for water, sewer, gas, or electric service	Yes
Impact fees for homebuyers or developers of new development/homes	Yes
Stormwater utility fee	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	No
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	No
Other federal or state Funding Programs	Yes - Consolidated Local Street and Highway Improvement Program (CHIPs) through NYSDOT
Open Space Acquisition funding programs	No
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	No

Education and Outreach Capability

Table 9.21-6 summarizes the education and outreach resources available to the Village of Suffern.

Table 9.21-6. Education and Outreach Capabilities

Outreach Resources	Available? (Yes/No)	Comment:
Public information officer or communications office	No	-
Personnel skilled or trained in website development	No	-
Hazard mitigation information available on your website	Yes	The Village maintains a website that provides links to the various municipal departments, local laws and planning documents, Village newsletter, news updates, and links to local, county, state and federal governments. Additionally, the Village provides flood awareness safety tips, high wind safety tips and winter safety tips to its residents.
Social media for hazard mitigation education and outreach	No	-
Citizen boards or commissions that address issues related to hazard mitigation	No	-
Warning systems for hazard events	Yes	The County utilizes NY-Alert and CodeRed (the backup to NY-Alert) for emergency notifications (all Towns and Villages have access to it).
Natural disaster/safety programs in place for schools	No	-
Organizations that conduct outreach to socially vulnerable populations and underserved populations	No	-
Public outreach mechanisms / programs to inform citizens on natural hazards, risk, and ways to protect themselves during such events	Yes	See below

Outreach Resources	Available? (Yes/No)	Comment:
If yes, please describe.	-	The Village maintains a website that provides links to the various municipal departments, local laws and planning documents, Village newsletter, news updates, and links to local, county, state and federal governments. Additionally, the Village provides flood awareness safety tips, high wind safety tips and winter safety tips to its residents.

Community Classifications

Table 9.21-7 summarizes classifications for community programs available to the Village of Suffern.

Table 9.21-7. Community Classifications

Program	Participating? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	Yes	9	5/1/2018
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	-	-
New York State Department of Environmental Conservation (NYSDEC) Climate Smart Community	No	-	-
National Weather Service Storm Ready Certification	No	-	-
Firewise Communities classification	No	-	-
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable

— = Unavailable

Adaptive Capacity

Adaptive capacity is defined as “the ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or respond to consequences” (IPCC 2022). Each jurisdiction has a unique combination of capabilities to adjust to, protect from, and withstand a future hazard event, future conditions, and changing risk. Table 9.21-8 summarizes the adaptive capacity for each identified hazard of concern and the Village’s capability to address related actions using the following classifications:

- Strong: Capacity exists and is in use.
- Moderate: Capacity might exist; but is not used or could use some improvement.
- Weak: Capacity does not exist or could use substantial improvement.

Table 9.21-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Disease Outbreak	Moderate
Drought	Moderate
Earthquake	Moderate
Extreme Temperature	Moderate

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Flood	Moderate
Landslide	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

9.21.4 National Flood Insurance Program Compliance

This section provides specific information on the management and regulation of the regulatory floodplain, including current and future compliance with the National Flood Insurance Program (NFIP). The floodplain administrator listed in Table 9.21-1 is responsible for maintaining this information.

NFIP Summary

Table 9.21-9 summarizes the NFIP statistics for the Village of Suffern.

Table 9.21-9. The Village of Suffern NFIP Summary of Policy and Claim Statistics

# Policies	62
# Claims (Losses)	432
Total Loss Payments	\$4,914,588
# Repetitive Loss Properties (NFIP definition)	0
# Repetitive Loss Properties (FMA definition)	29
# Severe Repetitive Loss Properties	4
# Policies Within the 1 percent Annual Chance Flood Boundary	3

NFIP Definition of Repetitive Loss: The NFIP defines a repetitive loss property as any insurable building for which two or more claims of more than \$1,000 were paid by the NFIP within any rolling 10-year period since 1978.

FMA Definition of Repetitive Loss: FEMA’s Flood Mitigation Assistance (FMA) program defines a repetitive loss property as any insurable building that has incurred flood-related damage on two occasions, in which the cost of the repair, on average, equaled or exceeded 25 percent of the market value of the structure at the time of each such flood event.

Definition of Severe Repetitive Loss: A residential property covered under an NFIP flood insurance policy and: (a) That has at least four NFIP claim payments over \$5,000 each, and the cumulative amount of such claims payments exceeds \$20,000; or (b) For which at least two separate claims payments have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building. At least two of the claims must have occurred within any 10-year period, more than 10 days apart.

Source: FEMA, December 2023

Note: RL count may include properties also identified as SRL.

Flood Vulnerability Summary

Table 9.21-10 provides a summary of the NFIP program in the Village of Suffern.

Table 9.21-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	Lonergan Drive, Temple Lane, Spicer Road, South Street, Ruby Street, Ed Fagan Drive, Pat Malone Drive, Brook Street
Do you maintain a list of properties that have been damaged by flooding?	Yes

NFIP Topic	Comments
Do you maintain a list of property owners interested in flood mitigation?	Yes
How many homeowners and/or business owners are interested in mitigation (elevation or acquisition)?	Several, but the list is not broken down.
Are any RiskMAP projects currently underway in your jurisdiction? <ul style="list-style-type: none"> If so, state what projects are underway. 	No
How do you make Substantial Damage determinations?	Percentage of total value 50 percent or greater
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	Zero
How many properties have been mitigated (elevation or acquisition) in your jurisdiction? <ul style="list-style-type: none"> If there are mitigation properties, how were the projects funded? 	63
Do your flood hazard maps adequately address the flood risk within your jurisdiction? <ul style="list-style-type: none"> If not, state why. 	Yes
NFIP Compliance	
What local department is responsible for floodplain management?	Department of Public Works
Are any certified floodplain managers on staff in your jurisdiction?	Yes
Do you have access to resources to determine possible future flooding conditions from climate change?	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? <ul style="list-style-type: none"> If so, what type of assistance/training is needed? 	No
Provide an explanation of NFIP administration services you provide (e.g., permit review, GIS, education/outreach, inspections, engineering capability)	Permit Review
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	Damage greater than 5 percent of value of structure.
What are the barriers to running an effective NFIP program in the community, if any?	None
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? <ul style="list-style-type: none"> If so, state the violations. 	No
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	April 20, 2022
What is the local law number or municipal code of your flood damage prevention ordinance?	Chapter 141- Flood Damage Prevention LL No. 14-2013.
What is the date that your flood damage prevention ordinance was last amended?	2013
Does your floodplain management program meet or exceed minimum requirements? <ul style="list-style-type: none"> If exceeds, in what ways? 	Yes

NFIP Topic	Comments
Are there other local ordinances, plans or programs (e.g., site plan review) that support floodplain management and meeting the NFIP requirements? For instance, does the planning board or zoning board consider efforts to reduce flood risk when reviewing variances such as height restrictions?	Planning Board and Zoning Board consider all efforts to reduce flood risks when reviewing variances such as height restrictions.
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	Currently participate in the CRS Program.

9.21.5 Growth/Development Trends

Understanding how past, current, and projected development patterns have or are likely to increase or decrease risk in hazard areas is a key component to appreciating a jurisdiction’s overall risk to its hazards of concern. Recent and expected future development trends, including major residential/commercial development and major infrastructure development, are summarized in Table 9.21-11 through Table 9.21-13.

Table 9.21-11. Number of Building Permits for New Construction Issued Since the Previous HMP

	New Construction Permits Issued			Total
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	
2018				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2019				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2020				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2021				
Total Permits	0	1	0	1
Permits within SFHA	0	0	0	0
2022				
Total Permits	1	1	0	2
Permits within SFHA	0	0	0	0

SFHA = Special Flood Hazard Area (1 percent flood event)

Table 9.21-12. Recent Major Development and Infrastructure from 2018 to Present

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
New Antrim Point	Apt. Building	52	176 Lafayette Ave Suffern NY 10901	None	Completed
Washington Mews	Apt. Building	60	15 Washington Ave Suffern NY 10901	None	Almost Completed

* Only location-specific hazard zones or vulnerabilities identified.

Table 9.21-13. Known or Anticipated Major Development and Infrastructure in the Next Five Years

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
Brookfield Property	Industrial	3 Structures	25 Old Mill Road Suffern NY 10901	AE, X	Planning Stages

* Only location-specific hazard zones or vulnerabilities identified.

9.21.6 Jurisdictional Risk Assessment

The hazard profiles in Volume I provide detailed information regarding each planning partner’s vulnerability to the identified hazards, including summaries of the Village of Suffern risk assessment results and data used to determine the hazard ranking. Key local risk assessment information is presented below.

Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Village are shown in Figure 9.21-1 through Figure 9.21-2. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps are provided only for hazards that can be identified clearly using mapping techniques and technologies and for which Suffern has significant exposure. The maps show the location of potential new development, where available.

Figure 9.21-1. Village of Suffern Flood and Dam Inundation Hazard Area Extent and Location

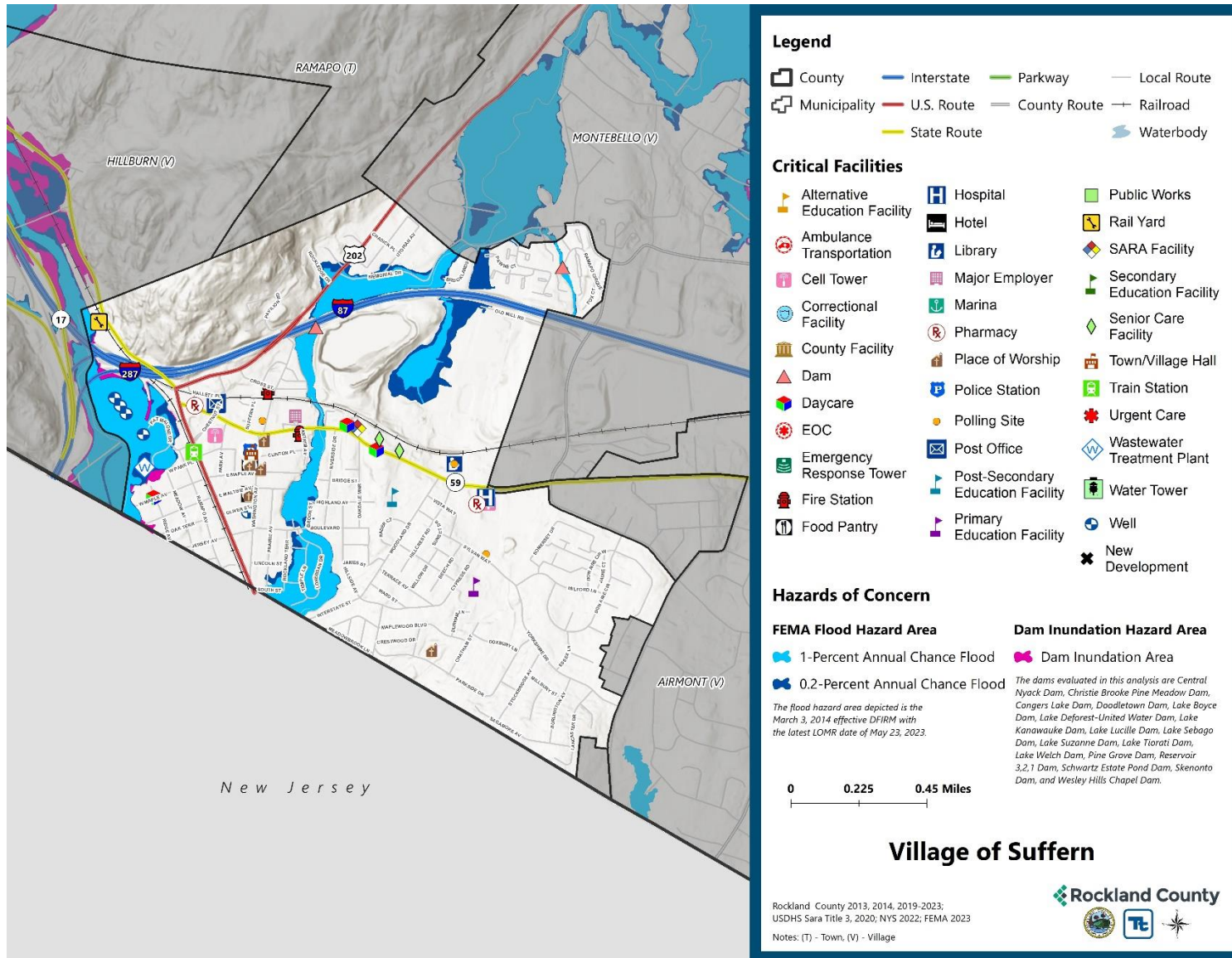
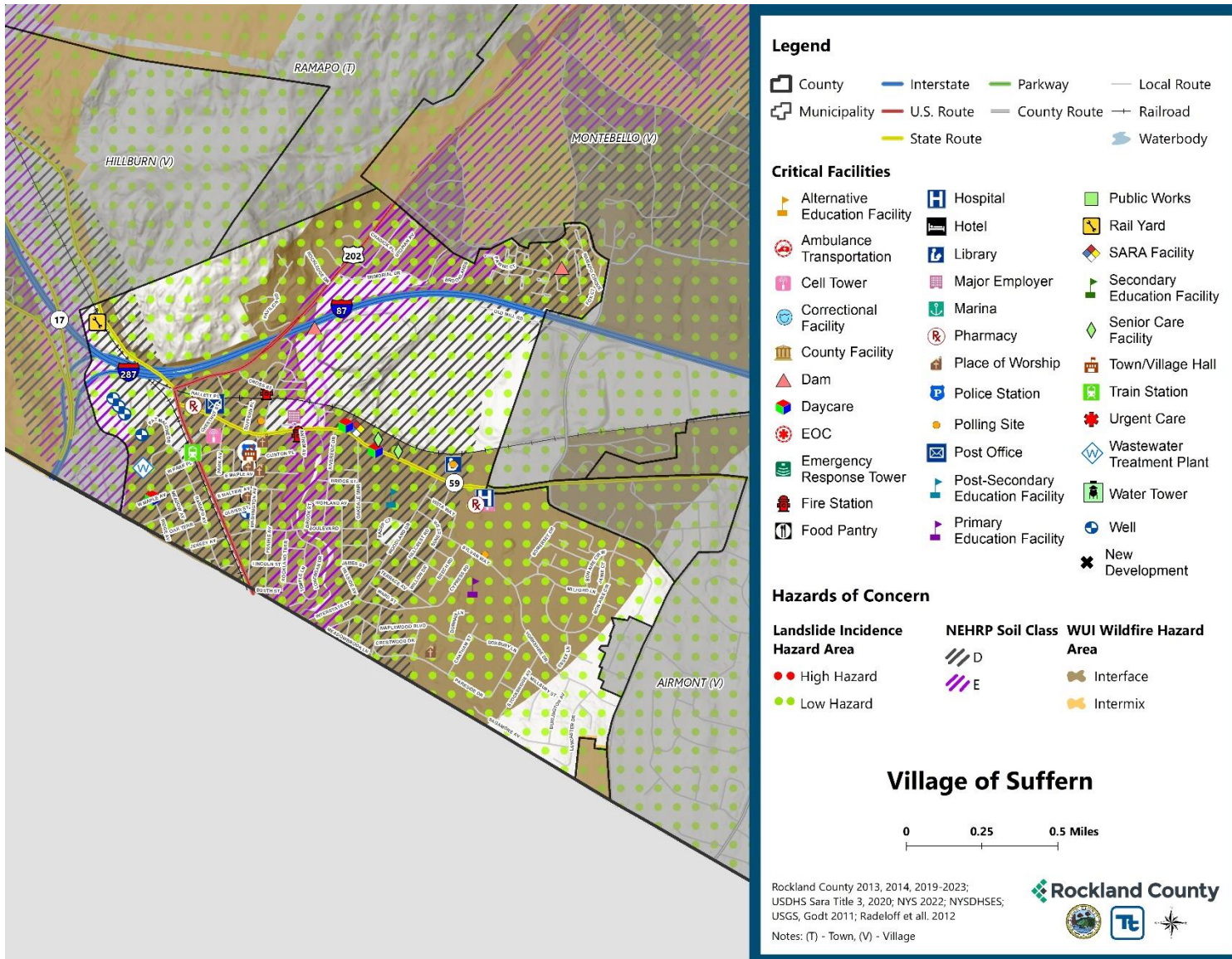


Figure 9.21-2. Village of Suffern Landslide, Earthquake, and Wildfire Hazard Area Extent and Location



Hazard Event History

The history of natural and non-natural hazard events in the Village of Suffern is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 9.21-14 provides details on loss and damage in the Village during hazard events since the last hazard mitigation plan update.

Table 9.21-14. Hazard Event History in the Village of Suffern

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Summary of Damage and Losses
Jan 20, 2020 - May 11, 2023	New York Covid-19 (3434-EM-NY, 4480-DR-NY)	Yes	The Covid-19 pandemic resulted in nationwide shutdowns, social distancing and masking requirements, and immunization efforts. Since the start of the pandemic, roughly 950 deaths have been reported in Rockland County. The federal Public Health Emergency expired in May 2023, but illness continues to occur as the virus shifts to becoming endemic.	The Village followed State mandates of social distancing and masking.
August 4, 2020	New York Tropical Storm Isaias (4567-DR-NY)	Yes	The center of Isaias passed about 65 miles west of New York City at 3 pm on August 4, 2020. Tropical storm force winds extended well east of the center of circulation. In addition, 1 to 3 inches of rainfall, highest west, were recorded across the county. These types of winds and rainfall across the area resulted in numerous trees and tree limbs being downed, power outages, damages to homes and automobiles, and disruption to transit.	Winds and rainfall caused damage and power outages to pumps at Water Treatment Plant. Numerous trees were downed requiring emergency protective measures.
September 1-3, 2021	New York Remnants of Hurricane Ida (3572-EM-NY, 4615-DR-NY)	Yes	Extremely heavy rainfall associated with the remnants of Hurricane Ida overspread southeast New York during the evening of September 1 and continued through the early morning hours of September 2. Rainfall totals ranged from 5-8 inches across much of the region, with much of that rain falling in just a few hours. This resulted in widespread catastrophic flash flooding.	Flooding caused extensive damage to Village roadways, parks, and athletic fields. Roads were closed and extensive debris clean-up was needed requiring emergency protective measures.
July 9-10, 2023	Severe Storm, Flooding	No	Severe storms and flooding resulted in road closures, including portions of the Palisades Interstate Parkway, throughout Rockland County.	Flooding resulted in road closures, debris clean-up and sinkholes.

EM = Emergency Declaration (FEMA)
 FEMA = Federal Emergency Management Agency

DR = Major Disaster Declaration (FEMA)
 N/A = Not applicable

Hazard Ranking and Vulnerabilities

The hazard profiles in Volume I have detailed information regarding each planning partner’s vulnerability to the identified hazards. The following summarizes presents key risk assessment results for the Village of Suffern.

Hazard Ranking

The participating jurisdictions have differing degrees of vulnerability to the hazards of concern, so each jurisdiction ranked its own degree of risk to each hazard. The community-specific hazard ranking is based on problems and impacts identified by the risk assessment presented in Volume I. The ranking process involves an assessment of the likelihood of occurrence for each hazard; the potential impacts of the hazard on people, property, and the economy; community capabilities to address the hazard; and changing future climate conditions. Suffern reviewed the County hazard ranking and individual results to assess the relative risk of the hazards of concern to the community. During the review of the hazard ranking, the Village indicated the following hazard rankings were appropriate.

Table 9.21-15 shows Suffern’s final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 9.21-15. Hazard Ranking

Hazard	Rank
Dam Failure	Low
Disease Outbreak	Medium
Drought	Medium
Earthquake	Medium
Extreme Temperature	Medium
Flood	Medium
Landslide	Low
Severe Weather	High
Severe Winter Weather	High
Wildfire	Medium

Note: The scale is based on the hazard rankings established in Volume I, modified as appropriate based on review by the jurisdiction

Critical Facilities

Table 9.21-16 identifies critical facilities in the community located in the 1 percent and 0.2 percent annual chance floodplains.

Table 9.21-16. Critical Facilities Flood Vulnerability

Name	Type	Exposure		Addressed by Proposed Action	Already Protected to 0.2 percent Flood Level (describe protections)
		1 percent Event	0.2 percent Event		
Lake Antrim Dam	Dam	Yes	Yes	2024-SuffernV-17	No
Ramapo Cirque Dam	Dam	Yes	Yes	2024-SuffernV-17	No

Name	Type	Exposure		Addressed by Proposed Action	Already Protected to 0.2 percent Flood Level (describe protections)
		1 percent Event	0.2 percent Event		
Suffern Water Well #3	Well	Yes	Yes	N/A	Pump head three feet above Base Flood Elevation (BFE) at Water Treatment Facility.
Suffern Water	Well	Yes	Yes	N/A	Pump head three feet above BFE at Water Treatment Facility.
Suffern Water	Well	Yes	Yes	N/A	Pump head three feet above BFE at Water Treatment Facility.
Suffern Water	Well	Yes	Yes	N/A	Pump head three feet above BFE at Water Treatment Facility.

Source: Rockland County 2023, FEMA

Identified Issues

After review of the Village of Suffern’s hazard event history, hazard rankings, hazard location, and current capabilities, the Village of Suffern identified the following vulnerabilities within their community:

- The Village does not have any organizations that conduct outreach to socially vulnerable populations and underserved populations.
- Repetitively flooded properties place an undue stress on the property owner and Village and efforts should be made to mitigate them.
- There are flood prone roadways in the Village, including Lonergan Drive, Temple Lane, Spicer Road, South Street, Ruby Street, Ed Fagan Drive, Pat Malone Drive, and Brook Street.
- The Village currently does not have a comprehensive education and outreach program. There is a need to educate residents about storm preparation, response, and recovery.
- The Village is currently unable to warn commuters of flood risk in the area.
- The Village does not have a Community Emergency Response Team (CERT). CERT is needed to education residents about disaster preparedness and trains members in basic disaster response skills.
- Village emergency shelters need emergency kits and property kitchen equipment for when the shelters are in operation.
- Currently, there is no watershed management group for the Mahwah River.
- There is need to identify locations to implement green infrastructure practices and stormwater storage systems in the Village.
- The Chestnut Street underpass along Orange Avenue and Route 202 needs to be improved, as the area becomes inundated during periods of heavy rain.
- There is a need for an environmentally sensitive program in the Village.
- The Lake Antrim area is prone to flooding.
- Areas of Lonegran Drive, downtown business district, and the ballfield are prone to flooding.
- The current emergency response plan does not include the functional-needs registry.

- GIS mapping needs to be updated for the Village.
- The Mahwah River Bank, along Memorial Drive has significant erosion as a result of flooding from past storms. As a result, the roadway has been closed.
- There are two dams (Lake Antrim Dam and Ramapo Cirque Dam), which are critical infrastructures, located in the 1- and 0.2-percent flood hazard areas. These structures have the potential to impact those living nearby.
- The Wastewater Treatment Plant must be protected to the 500-year flood or worst-case scenario.

**This issue was identified as a specific area of concern based on resident response to the Rockland County Hazard Mitigation Citizen survey.*

9.21.7 Mitigation Strategy and Prioritization

This section discusses past mitigation actions and status, describes proposed hazard mitigation initiatives, and prioritizes actions to address over the next five years.

Past Mitigation Initiative Status

Additional Mitigation Efforts

In addition to the mitigation initiatives completed in [Error! Not a valid bookmark self-reference.](#), the Village of Suffern did not identify any mitigation efforts completed since the last HMP.

Table 9.21-17 indicates progress on the Village’s mitigation strategy identified in the 2019 HMP. Actions that are still recommended but not completed or that are in progress are carried forward and combined with new actions as part of the mitigation strategy for this plan update. Previous actions that are now ongoing programs and capabilities are indicated as such and are presented in the capability assessment earlier in this annex.

Additional Mitigation Efforts

In addition to the mitigation initiatives completed in [Error! Not a valid bookmark self-reference.](#), the Village of Suffern did not identify any mitigation efforts completed since the last HMP.

Table 9.21-17. Status of Previous Mitigation Actions

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Suffern-1	Develop Outreach Program	All Hazards	Village, Emergency Services	<p>The Village currently does not have a comprehensive education and outreach program. There is a need to educate residents about storm preparation, response, and recovery.</p> <p>Develop a comprehensive Village-wide education and outreach program for storm preparation, response, and recovery.</p>	<p>1. Complete 2. Village website directs residents to the Rockland County Stormwater Consortium site for storm preparation information.</p>	<p>1. Discontinue 2. N/A 3. Complete</p>
V. Suffern-2	Upgrade the Village’s NIXLE	All Hazards	Village, Emergency Services, Rockland County	<p>The current emergency alert system is out of date and needs to be upgraded.</p> <p>Upgrade the Village’s NIXLE system to notify residents and businesses during Village-wide emergencies. Update the Village’s Emergency Operations Plan to comply with the National Incident Management System (NIMS).</p>	<p>1. Complete 2. The Village Police Department utilizes NIXLE System to notify residents.</p>	<p>1. Discontinue 2. N/A 3. Complete</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Suffern-3	Commuter lot signage	Severe Storm, Flood	Village, Emergency Services, DPW	<p>Unable to warn commuters of flood risk in the area.</p> <p>Purchase and install signage in commuter lots (including Lots A, B, F, and Lake Antrim / Memorial Pool parking) to warn about flooding risk to cars and help educate residents and commuters about the risks of flooding in the area.</p>	<p>1. In Progress</p> <p>2. Signage has been placed in a portion of the identified areas.</p>	<p>1. Include</p> <p>2. Purchase and install signage in remaining identified areas to warn about flooding risk to cars and help educate residents and commuters about the risk of flooding in the area.</p> <p>3. N/A</p>
V. Suffern-4	Develop a Community Emergency Response Team (CERT)	All Hazards	Village, Emergency Services, Rockland County	<p>CERT is needed as a way to education residents about disaster preparedness and trains members in basic disaster response skills.</p> <p>Develop a Community Emergency Response Team (CERT) to educate people about disaster preparedness and train citizen volunteers to assist their community when professional responders are not immediately available to help.</p>	<p>1. In Progress</p> <p>2. Presenting recruiting local residents to participate in the CERT Program</p>	<p>1. Include</p> <p>2. Ongoing recruitment to establish a Community Emergency Response Team to educate residents about disaster preparedness.</p> <p>3. N/A</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Suffern-5	Maintain List of Repetitive Flood Properties	All Hazards	Village, Emergency Services	<p>The Village does not have a list of homeowners and businesses that may need assistance moving resources prior to a storm. Additionally, the Village's EOP does contain this information and is in need of an update.</p> <p>Develop and maintain a volunteer roster to help homeowners and businesses that may need assistance in moving valuable resources out of harm's way before predicted storms move into the region and update the Village's Emergency Operations Plan.</p>	<p>1. Complete</p> <p>2. As a member of the Community Rating System (CRS) the Village has completed a list of homeowners and businesses that may need assistance moving resources prior to a storm.</p>	<p>1. Discontinue</p> <p>2. N/A</p> <p>3. Completed</p>
V. Suffern-6	Sheltering Materials	All Hazards	Village, Emergency Services	<p>Village emergency shelters need emergency kits and property kitchen equipment for when the shelters are in operation.</p> <p>Develop emergency kits, purchase materials to accommodate pets, and install kitchen equipment, where needed, at shelters in the Village.</p>	<p>1. In Progress</p> <p>2. Various Village Departments are identifying necessary emergency kits and kitchen equipment needs.</p>	<p>1. Include</p> <p>2. Provide emergency kits and update facilities to provide shelter and accommodate residents when necessary.</p> <p>3. N/A</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Suffern-7	Establish a Mahwah River Watershed Management Group	All Hazards	Village, Rockland County	<p>Currently, there is no watershed management group for the Mahwah River.</p> <p>Establish a Mahwah River Watershed Management Group that will collectively address development pressures, stormwater runoff issues and flood control mitigation projects at a watershed (regional) scale. Coordination with the Rockland-Bergen Bi-state River Commission will be part of the group's tasks.</p>	<p>1. In Progress</p> <p>2. Unable to fully coordinate with various County and State Stakeholders.</p>	<p>1. Include</p> <p>2. Establish a Mahwah River Watershed Management Group to address various stormwater runoff issues, coordinating with Rockland-Begen Bi-State River Commission.</p> <p>3. N/A</p>
V. Suffern-8	Mitigation Initiative Assistance	Flood	Village of Suffern, FEMA	<p>Repetitively flooded properties place an undue stress on the property owner and village and efforts should be made to mitigate them.</p> <p>Provide support to the Village to explore various buyout and relocation program opportunities, identify eligible properties, and administer the buyout program, and prepare an economic development plan to offset reduction in tax revenues resulting from a buyout.</p>	<p>1. In Progress</p> <p>2. Approximately 60 residential properties have participated in the FEMA buyout. Multiple new apartment complexes have been or will be constructed.</p>	<p>1. Include</p> <p>2. Will continue to advise property owners of any and all potential FEMA buyout opportunities.</p> <p>3. N/A</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Suffern-9	Mitigation Initiatives Education Campaign	Flood	Village of Suffern, FEMA	Homeowners need to be made aware of the potential damages to their utility and mechanical systems during flooding events. Encourage homeowners in areas susceptible to flooding to move utility and mechanicals from basements to upper floors. Hire an architect to develop schematic plan options for raised utility rooms, facilitate the use of preapproved plans through the approval process for homeowners and help identify funding sources for the retrofit of existing homes.	1. Ongoing Capability 2. The Village will continue to encourage homeowners in areas susceptible to flooding to move mechanicals from basements to upper floors.	1. Discontinue 2. N/A 3. This action is considered ongoing.
V. Suffern-10	Stormwater Infrastructure Inventory	All Hazards	Village of Suffern, NYSDOT, U.S. Federal Highway Administration	There is a need for a list of existing stormwater management infrastructure in the village. Inventory of existing stormwater management infrastructure.	1. Completed 2. A list was created by the Department of Public Works and Building Department. Future infrastructure projects will be added to the list.	1. Discontinue 2. N/A 3. A list was created by the Department of Public Works and Building Department. Future infrastructure projects will be added to the list.

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Suffern-11	Green Infrastructure Study	All Hazards	Village of Suffern, NYSDEC	<p>There is need to identify locations to implement green infrastructure practices and stormwater storage systems in the Village.</p> <p>Conduct a feasibility study to determine appropriate locations to implement green infrastructure practices and stormwater storage systems throughout Suffern.</p>	<p>1. In Progress</p> <p>2. Currently limited progress has been realized.</p>	<p>1. Include</p> <p>2. Keep as is</p> <p>3. N/A</p>
V. Suffern-12	Review Village Codes	Severe Storm, Flood	Village of Suffern	<p>Some facilities were built before code updates; therefore, they may be more susceptible to damage from a hazard event.</p> <p>Conduct a diagnostic review of the existing Village zoning code and other ordinances and provide recommendations to maximize flood protection and stormwater management, promote green infrastructure practices, and protect surface water resources and flood plains.</p>	<p>1. Ongoing Capability</p> <p>2. Codes and ordinances are reviewed continuously to identify room for amendments.</p>	<p>1. Discontinue</p> <p>2. N/A</p> <p>3. Ongoing capability. Codes and ordinances are reviewed continuously to identify room for amendments.</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Suffern-13	DPW Emergency Generator	All Hazards	Village of Suffern, DPW	<p>The DPW garage lacks permanent backup power and cannot fully function during periods of power outages.</p> <p>Provide permanent emergency power generators at the DPW Garage to maintain operation of the fuel pumps and at the South Street Pump Station to allow for uninterrupted service of the facility.</p>	<p>1. Complete</p> <p>2. Installed new emergency generator at DPW Garage and at the South Street Pump Station.</p>	<p>1. Discontinue</p> <p>2. N/A</p> <p>3. Required work completed.</p>
V. Suffern-14	NJ Transit Commuter Rail Line Crossing	All Hazards	Village of Suffern, NJ Transit, NYSDOT, U.S. Federal Highway Administration	<p>There is currently no access to the west ward near the emergency railroad crossing over the NJ Transit commuter rail line.</p> <p>Provide access to the West Ward by way of an at-grade Emergency Railroad Crossing over the NJ Transit Commuter Rail Line.</p>	<p>1. No Progress</p> <p>2. Unable to secure an Agreement with NJ Transit.</p>	<p>1. Discontinue</p> <p>2. N/A</p> <p>3. Unable to secure an Agreement with NJ Transit.</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Suffern-15	Chestnut Street Underpass Drainage Improvements	All Hazards	Village of Suffern, NYSDOT, NYSDEC, U.S. Federal Highway Administration, USACE	<p>The Chestnut Street underpass along Orange Avenue and Route 202 needs to be improved; area becomes inundated during periods of heavy rain.</p> <p>Install drainage improvements at the Chestnut Street underpass, along Orange Ave and along US Route 202 to better protect these transportation assets and to ensure that emergency services have access to these areas.</p>	<p>1. In Progress</p> <p>2. Investigative work currently underway. Some improvements have been completed.</p>	<p>1. Include</p> <p>2. Keep as is</p> <p>3. N/A</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Suffern-16	Critical Facilities in the Floodplain	Severe Storm, Flood	Village of Suffern, NYS and/or Rockland County Dept. of Health	<p>Critical facilities located in the floodplain are not only susceptible to flood damage but also create unnecessary complications for the municipality during an emergency event and post-disaster recovery.</p> <p>Protect the wastewater treatment plant, owned by the Village, and related facilities to the 500-year flood or worst-case scenario. The Village will determine feasible and cost-effective mitigation actions to implement which may include elevating critical mechanicals, floodproofing entries, installation of flood walls, and relocating the facility.</p>	<p>1. Discontinue 2. This is a repetitive action. Combine with Item 17.</p>	<p>1. Discontinue 2. N/A 3. This is a repetitive action. Consolidate with V.Suffern-17.</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Suffern-17	Physical Protective Measures for Critical Facilities in the Floodplain	Flood	Village DPW	<p>Critical facilities located in the floodplain are not only susceptible to flood damage but also create unnecessary complications for the municipality during an emergency event and post-disaster recovery.</p> <p>Protect the wastewater treatment plant, owned by the Village, and related facilities to the 500-year flood or worst-case scenario. The Village will determine feasible and cost-effective mitigation actions to implement which may include elevating critical mechanicals, floodproofing entries, installation of flood walls, and relocating the facility.</p>	<p>1. In Progress</p> <p>2. Install proposed flood wall at Wastewater Treatment Plant projected completed date during Second Quarter of 2024.</p>	<p>1. Include</p> <p>2. Make this an individual action for the WWTP. Consolidate with V.Suffern-16.</p> <p>3. N/A</p>
V. Suffern-18	Critical Facility Flood Protection Measures	Flood	Village DPW	<p>Village facilities are not protected from flood events.</p> <p>Research options and purchase portable flood barrier walls for protection of Village facilities.</p>	<p>1. No Progress</p> <p>2. There are no critical facilities identified as being in the floodplain, other than dams.</p>	<p>1. Discontinue</p> <p>2. N/A</p> <p>3. There are no critical facilities identified as being in the floodplain which haven't already been mitigated, other than dams.</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Suffern-19	Mahwah River Watershed Evaluation	All Hazards	Village of Suffern	<p>There is a need for an evaluation of the Mahwah River Watershed.</p> <p>Conduct a comprehensive evaluation of the Mahwah River Watershed in conjunction with the Ramapo River Watershed to identify mitigation goals and associated performance metrics, assess existing conditions with respect to erosion and deposition patterns, identify local and watershed-scale stressors, understand patterns of channel evolution, and make recommendations regarding flood mitigation.</p>	<p>1. No Progress</p> <p>2. No progress has been realized to date.</p>	<p>1. Include</p> <p>2. Consolidate with V.Suffern-20</p> <p>3. N/A</p>
V. Suffern-20	Sensitive Environments Program Development	All Hazards	Village of Suffern, Rockland County, NYS DEC	<p>There is a need for an environmentally sensitive program in the Village.</p> <p>Coordinate between the Village, County, and State to develop an environmentally sensitive program to (1) clear the channels of the Mahwah and Ramapo Rivers by removing debris and detritus from their bed and banks as well as from the shores of Lake Antrim; (2) develop a program for the ongoing maintenance of these the rivers.</p>	<p>1. No Progress</p> <p>2. No progress has been realized to date.</p>	<p>1. Include</p> <p>2. Consolidate with V.Suffern-20</p> <p>3. N/A</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Suffern-21	Lake Antrim Flood Improvements	Severe Storm, Flood	Village of Suffern, Rockland County, NYS DEC	Lake Antrim area is prone to flooding. Restore Lake Antrim by designing and installing improvements to the surrounding bank and floodplain.	1. No Progress 2. Technical and financial assistance are required.	1. Include 2. Keep as is 3. N/A
V. Suffern-22	Wastewater Treatment Plant	Flood	DPW	Critical facilities located in the floodplain are not only susceptible to flood damage but also create unnecessary complications for the municipality during an emergency event and post-disaster recovery. Wastewater Treatment Plant – build a small space on the roof of the sludge building to house the motor control center. This will ensure its continued operation in the event of a flood. Assure that any mitigation addresses the 500-year flood event or "worst damage scenario".	1. No Progress 2. Will not be necessary as a result of the floodwall installation.	1. Discontinue 2. N/A 3. Proposed floodwall at WWTP.

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Suffern-23	Water Supply Wells	Flood	DPW	<p>Critical facilities located in the floodplain are not only susceptible to flood damage but also create unnecessary complications for the municipality during an emergency event and post-disaster recovery.</p> <p>Water Supply Wells – raise the roof of the building to protect the critical equipment inside which can be mounted above the design flood elevation. Assure that any mitigation addresses the 500-year flood event or "worst damage scenario".</p>	<p>1. Complete</p> <p>2. Raised pump heads of Well No. 1, Well No. 2 and Well No. 4 three feet above Base Flood Elevation (BFE) at Water Treatment Facility.</p>	<p>1. Discontinue</p> <p>2. N/A</p> <p>3. Completed</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Suffern-24	South Street Pump Station	Flood	DPW	<p>Critical facilities located in the floodplain are not only susceptible to flood damage but also create unnecessary complications for the municipality during an emergency event and post-disaster recovery.</p> <p>South Street Pump Station – replace existing pumps with dry pit submersible pumps and build a raised exterior platform for a new emergency generator. This pump serves the entire village. Assure that any mitigation addresses the 500-year flood event or "worst damage scenario".</p>	<p>1. Complete 2. Action completed</p>	<p>1. Discontinue 2. N/A 3. Completed</p>
V. Suffern-25	DPW Garage	Flood	DPW	<p>Critical facilities located in the floodplain are not only susceptible to flood damage but also create unnecessary complications for the municipality during an emergency event and post-disaster recovery.</p> <p>DPW Garage – upgrade electrical services and a raised electrical panel above the design flood elevation and install a larger generator. Assure that any mitigation addresses the 500-year flood event or "worst damage scenario".</p>	<p>1. Complete 2. Action completed</p>	<p>1. Discontinue 2. N/A 3. Completed</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Suffern-26	Lonegran Drive Drainage Improvements	Flood	DPW	<p>Areas of Lonegran Drive, downtown business district, and ballfield are prone to flooding.</p> <p>Identify different options to improve drainage and flood prevention in the areas of Lonegran Drive, downtown business district, and ballfield.</p>	<p>1. In Progress</p> <p>2. No Progress has been realized.</p>	<p>1. Include</p> <p>2. Keep as is</p> <p>3. N/A</p>
V. Suffern-27	Comprehensive Plan Updates	All Hazards	Village of Suffern	<p>Current comprehensive plan does not incorporate natural hazards.</p> <p>When updating the Village Comprehensive Plan, ensure that hazard mitigation and hazard areas are incorporated.</p>	<p>1. Complete</p> <p>2. The plan has been updated</p>	<p>1. Discontinue</p> <p>2. N/A</p> <p>3. Completed</p>
V. Suffern-28	Community Rating System (CRS)	Flood	Village of Suffern	<p>The Village is currently not in the CRS program; but working towards joining.</p> <p>Continue working towards joining CRS.</p>	<p>1. Complete</p> <p>2. Member of CRS Program</p>	<p>1. Discontinue</p> <p>2. N/A</p> <p>3. Completed</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Suffern-29	Privately Owned Critical Facility in Floodplain	Flood	Village Board	<p>Critical facilities located in the floodplain are not only susceptible to flood damage but also create unnecessary complications for the municipality during an emergency event and post-disaster recovery.</p> <p>Notify and provided needed support to the below facility manager/operator to evaluate the Village of Suffern’s flood vulnerability and determine what mitigation options are needed, if any. Assure that any mitigation addresses the 500-year flood event or “worst damage scenario”</p> <ul style="list-style-type: none"> • O&R Suffern Gate Station – Gas (hazmat) 	<p>1. Complete</p> <p>2. The O&R Suffern Gate Station Project has been completed. The Gate Station was elevated as required for a Critical Facility.</p>	<p>1. Discontinue</p> <p>2. N/A</p> <p>3. Completed</p>
V. Suffern-30	Update the Emergency Response Plan	All Hazards	Rockland County, Village	<p>The current emergency response plan does not include the functional-needs registry.</p> <p>Work with Rockland County to obtain access to the functional-needs registry and enhance emergency response plans for the Village.</p>	<p>1. In Progress</p> <p>2. N/A</p>	<p>1. Include</p> <p>2. Keep as is</p> <p>3. N/A</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Suffern-31	GIS Online Mapping	All Hazards	Village Trustee	<p>GIS mapping needs to be updated for the Village.</p> <p>Continue working with the Stormwater Consortium of Rockland County and the County Planning Department to expand and disseminate GIS and other hazard information on the internet.</p>	<p>1. In Progress</p> <p>2. As a result of a DEC Grant additional progress has been achieved.</p>	<p>1. Include</p> <p>2. Keep as is</p> <p>3. N/A</p>

Proposed Hazard Mitigation Initiatives for the HMP Update

Suffern participated in the mitigation strategy workshop for this HMP to identify appropriate actions to include in a local hazard mitigation strategy. Its comprehensive consideration of all possible activities to address hazards of concern included review of the following FEMA documents:

- FEMA 551 “Selecting Appropriate Mitigation Measures for Floodprone Structures” (March 2007)
- FEMA “Mitigation Ideas—A Resource for Reducing Risk to Natural Hazards” (January 2013).

The action worksheets included at the end of this annex list the mitigation actions that Suffern would like to pursue in the future to reduce the effects of hazards. The actions are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in the Village’s priorities.

Table 9.21-18 indicates the range of proposed mitigation action categories. The four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table to further demonstrate the wide range of activities and mitigation measures selected.

Volume I identifies 14 evaluation criteria for prioritizing the mitigation actions. To assist with rating each mitigation action as high, medium, or low priority, a numeric rank is assigned (-1, 0, or 1) for each of the evaluation criteria. Table 9.21-19 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Table 9.21-18. Analysis of Mitigation Actions by Hazard and Category

Hazard	Actions That Address the Hazard, by Action Category									
	FEMA				CRS					
	LPR	SIP	NSP	EAP	PR	PP	PI	NR	SP	ES
Dam Failure	1	-	-	5	-	-	5	-	-	3
Disease Outbreak	1	-	-	3	-	-	3	-	-	2
Drought	1	-	-	3	-	-	3	-	-	3
Earthquake	1	-	-	4	-	-	4	-	-	3
Extreme Temperature	1	-	-	4	-	-	4	-	-	3
Flood	5	5	3	6	4	2	6	3	5	3
Landslide	1	-	-	4	-	-	4	-	-	3
Severe Weather	4	4	3	4	3	1	4	3	4	3
Severe Winter Weather	1	-	-	4	-	-	4	-	-	3
Wildfire	1	-	-	4	-	-	4	-	-	3

Local Plans and Regulations (LPR)—These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.

Structure and Infrastructure Project (SIP)—These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct structures to reduce the impact of hazards.

Natural Systems Protection (NSP)—These are actions that minimize damage and losses and preserve or restore the functions of natural systems.

Education and Awareness Programs (EAP)—These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities

Preventative Measures (PR)—Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.

Property Protection (PP)—These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.

Public Information (PI)—Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.

Natural Resource Protection (NR)—Actions that minimize hazard loss and preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.

Structural Flood Control Projects (SP)—Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.

Emergency Services (ES)—Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities

Table 9.21-19. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Other Community Objectives	Total	High / Medium / Low
2024-SuffernV-01	Socially Vulnerable Populations Outreach	1	0	1	1	1	1	0	1	1	1	1	1	1	1	12	High
2024-SuffernV-02	Repetitive and Severe Repetitive Loss Properties	1	1	1	1	1	0	1	1	1	1	1	1	0	1	12	High
2024-SuffernV-03	Flood Prone Roadways	1	1	1	1	1	0	1	0	1	0	1	1	0	1	10	Medium
2024-SuffernV-04	Develop Outreach Program	1	1	1	1	1	1	0	1	1	1	1	1	0	1	12	High
2024-SuffernV-05	Commuter Lot Signage	1	0	1	1	1	1	0	1	1	0	1	1	0	0	9	Medium
2024-SuffernV-06	Community Emergency Response Team (CERT)	1	1	1	1	1	1	0	1	1	1	1	1	0	1	12	High
2024-SuffernV-07	Sheltering Materials	1	1	1	1	1	0	0	1	1	1	1	0	1	1	11	High
2024-SuffernV-08	Mahwah River Watershed Management Group	0	1	1	1	1	1	1	1	1	1	1	1	0	1	12	High
2024-SuffernV-09	Green Infrastructure Study	0	1	1	1	1	0	1	1	1	1	1	1	1	0	11	High
2024-SuffernV-10	Chestnut Street Underpass Drainage Improvements	1	1	1	1	1	0	1	1	1	1	1	1	1	1	13	High
2024-SuffernV-11	Sensitive Environments Program Development	0	0	1	1	1	0	1	1	1	1	1	1	0	1	10	Medium
2024-SuffernV-12	Lake Antrim Flood Improvements	1	1	1	1	1	0	1	1	1	1	1	1	0	1	12	High
2024-SuffernV-13	Lonegran Drive Drainage Improvements	1	1	1	1	1	0	1	1	1	1	1	1	1	1	13	High
2024-SuffernV-14	Emergency Response Plan Update	1	1	1	1	1	1	0	1	1	1	0	1	0	1	11	High
2024-SuffernV-15	GIS Online Mapping	1	0	1	1	1	1	0	1	1	1	1	1	0	1	12	High
2024-SuffernV-16	Mahwah River Bank Flood Mitigation	0	1	1	1	1	0	1	1	1	1	1	1	1	1	11	High
2024-SuffernV-17	Dam Owner Partnership	1	1	1	1	1	1	0	1	1	1	1	1	1	0	12	High

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Other Community Objectives	Total	High / Medium / Low
2024-SuffernV-18	Physical Protective Measures at the Wastewater Treatment Plant	1	1	1	1	1	1	0	1	1	0	1	1	1	0	11	High

Note: Volume I, Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14).

Action 2024-SuffernV-01. Socially Vulnerable Populations Outreach

Action Name:	2024-SuffernV-01. Socially Vulnerable Populations Outreach	
Description of the Problem:	The Village does not have any organizations that conduct outreach to socially vulnerable populations and underserved populations. During hazard events, the public may need to quickly access information about evacuation routes and shelters, or other steps they can take to protect themselves and their property. Residents may also need information about what services are available or offline due to flooding from intense precipitation, dam failure, severe storms, and snow melt; where to receive a vaccination or other healthcare in the event of a disease outbreak; public cooling or heat centers, such as libraries, during extreme temperatures; and evacuation areas for earthquakes, landslides, and wildfires. Socially vulnerable and underserved populations may rely on these types of services more heavily than other segments on the population. Furthermore, they may be less able to access these resources due to a variety of potential obstacles, such as mobility issues or language barriers.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	Create outreach materials, or utilize those from Rockland County, on hazard risks for socially vulnerable populations. Methods of distribution may include Village events, the Village newsletters, social media, the Village website, and having the materials on display for the public at Village libraries and offices. Consider hiring staff to work directly with socially vulnerable populations.	
Lead Agency:	Village Administration	
Supporting Agencies:	Rockland County	
Estimated Cost:	Low	
Potential Funding Sources:	Village Budget, HMGP	
Implementation Timeline:	Within 3 years	
Goals Met:	1, 3, 5	
Benefits:	This action will ensure there is an individual working to identify and work with the socially vulnerable populations in the Village. Furthermore, this action will create opportunities to educate and inform populations on hazard risks.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Socially vulnerable populations in the Village will become educated on hazards risks. The Village will identify an individual to identify and work with these populations to ensure the most up to date information is being shared.	
Impact on Critical Facilities/Lifelines:	Educating populations on hazard risk and how to mitigate the risks can decrease the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.	
Impact on Capabilities	This action would build upon the County’s already existing public education and outreach program and adapt its contents to the Village’s needs.	

Impact on Future Development:	Not applicable		
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate-related disaster events. This action will inform residents and business owners of how to reduce risk from hazards and how climate change may exacerbate those risks.		
Priority: Check one	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current methods remain the only ones used
	Rely on state or federal resources		Resources may be generalized and not specific to the risks in the Village
	Use only a few methods for distribution		Using only a few methods of distribution may hinder socially vulnerable populations from receiving the guidance

Action 2024-SuffernV-02. Repetitive and Severe Repetitive Loss Properties

Action Name:	2024-SuffernV-02. Repetitive and Severe Repetitive Loss Properties		
Description of the Problem:	There are 29 Repetitive Loss and four Severe Repetitive Loss properties in the Village. These properties exhibit elevated vulnerability and may face increasing risks to flood damage due to changes in precipitation intensity and frequency, raising the possibility for these properties to become Repetitive/Severe Repetitive Loss Properties. These properties may require a disproportionate amount of municipal resources after hazard events if they are damaged.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The Village will promote and support non-structural flood hazard mitigation alternatives for at risk properties within the floodplain, including those that have been identified as Repetitive Loss (RL) and Severe Repetitive Loss (SRL), such as acquisition/relocation or elevation depending on feasibility. The parameters for this initiative would be funding, benefits versus cost, and willing participation of property owners.		
Lead Agency:	Floodplain Administrator		
Supporting Agencies:	Rockland County		
Estimated Cost:	Medium		
Potential Funding Sources:	FEMA FMA, FMA SWIFT, Village Budget, County Budget, Property Owners		
Implementation Timeline:	3 years		
Goals Met:	1, 2, 3		
Benefits:	This action would foster comprehensive floodplain management by removing at risk properties from the flood hazard area or elevating properties to reduce the flood risk.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	Socially vulnerable populations may be able to have houses elevated or acquired when it would otherwise be unaffordable.		
Impact on Critical Facilities/Lifelines:	Removing structures from the floodplain decreases the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.		
Impact on Capabilities	This action will enhance the Village’s current NFIP capabilities.		
Impact on Future Development:	Increased outreach to homeowners within a flood prone area will limit construction in areas that are prone to hazard events. Homes may be acquired, which will remove those structures from the floodplain and prevent future development on those sites.		
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low

Alternatives	Action	Evaluation
	No action	Current problem continues
	Construct flood walls/barriers around vulnerable areas	Costly and can divert floodwaters to other areas
	Deployable flood barriers for vulnerable areas	Requires a great deal of work to implement prior to each event

Action 2024-SuffernV-03. Flood Prone Roadways

Action Name:	2024-SuffernV-03. Flood Prone Roadways	
Description of the Problem:	There are flood prone roadways in the Village, including Lonergan Drive, Temple Lane, Spicer Road, South Street, Ruby Street, Ed Fagan Drive, Pat Malone Drive, and Brook Street.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Village will develop specific mitigation solutions for flood prone road systems (roads, bridges, intersections, drainage, etc.) under the leadership of County DPW.	
Lead Agency:	Village Public Works	
Supporting Agencies:	County Public Works	
Estimated Cost:	Medium	
Potential Funding Sources:	FEMA BRIC, HMGP, Village Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	2	
Benefits:	This action will identify measures to protect infrastructure in the transportation lifeline, which will lead to the assurance of clear roadways for evacuations, regular travel, and emergency responses.	
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	This action will assist socially vulnerable populations whose properties are impacted by flooding along flood prone roads.	
Impact on Critical Facilities/Lifelines:	This action will identify measures to protect infrastructure in the transportation lifeline, which will lead to the assurance of clear roadways for evacuations, regular travel, and emergency responses.	
Impact on Capabilities	Not applicable	
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.	
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events.	
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium
Alternatives	Action	
	No action	
	Relocate all flood prone road system	
Evaluation		
Current problem continues		
Not feasible		

	Raise all flood prone roads	Cost prohibitive
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Action 2024-SuffernV-04. Develop Outreach Program

Action Name:	2024-SuffernV-04. Develop Outreach Program	
Description of the Problem:	The Village currently does not have a comprehensive education and outreach program. During hazard events, the public may need to quickly access information about evacuation routes and shelters, or other steps they can take to protect themselves and their property. Residents may also need information about what services are available or offline due to flooding from intense precipitation, dam failure, severe storms, and snow melt; where to receive a vaccination or other healthcare in the event of a disease outbreak; public cooling or heat centers, such as libraries, during extreme temperatures; and evacuation areas for earthquakes, landslides, and wildfires.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	Develop a comprehensive Village-wide education and outreach program for storm preparation, response, and recovery. Work with Rockland County on their program that provides information to the municipalities.	
Lead Agency:	Village Administration	
Supporting Agencies:	Rockland County	
Estimated Cost:	Low	
Potential Funding Sources:	Village Budget	
Implementation Timeline:	1 year	
Goals Met:	1, 2, 3, 5	
Benefits:	This action will improve the current public education and outreach program in the Village by including discussions on disaster preparedness and hazard mitigation to residents and business owners, which will contribute to the resiliency of the Village.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Socially vulnerable populations will learn how to prepare for and mitigate the various hazards which may impact them in the Village.	
Impact on Critical Facilities/Lifelines:	Businesses, which may be considered critical facilities or lifelines, would be more informed on how to prepare for emergency events and mitigate the risks of potential hazards. With these businesses becoming more resilient, this action would contribute to their continuity of operations.	
Impact on Capabilities	This action would build upon the County's already existing public education and outreach program and adapt its contents to the Village's needs.	
Impact on Future Development:	Not applicable	
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related disaster events. This action will inform residents and business owners of how to reduce risk from hazards and how climate change may exacerbate those risks.	

Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action	Evaluation	
	No action	Current methods remain the only ones used	
	Rely on state or federal resources	Resources may be generalized and not specific to the risks in the Village	
	Use only a few methods for distribution	Using only a few methods of distribution may hinder socially vulnerable populations from receiving the guidance	

Action 2024-SuffernV-05. Commuter Lot Signage

Action Name:	2024-SuffernV-05. Commuter Lot Signage	
Description of the Problem:	The commuter parking lot in the Village is susceptible to flooding. There is currently no way to warn commuters of flood risk in the area.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	Purchase and install signage in commuter lots (including Lots A, B, F, and Lake Antrim / Memorial Pool parking) to warn about flooding risk to cars and help educate residents and commuters about the risks of flooding in the area.	
Lead Agency:	Village Emergency Services	
Supporting Agencies:	Village Public Works	
Estimated Cost:	Medium	
Potential Funding Sources:	Village Budget	
Implementation Timeline:	Within 3 years	
Goals Met:	1, 3, 5	
Benefits:	This action will provide emergency guidance for residents and commuters which utilize commuter lots (including Lots A, B, F, and Lake Antrim / Memorial Pool parking) will be information of flood risks in the area.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Populations which utilize commuter lots (including Lots A, B, F, and Lake Antrim / Memorial Pool parking) will be information of flood risks in the area.	
Impact on Critical Facilities/Lifelines:	This action will enhance the safety and security lifelines by providing emergency guidance for residents and commuters.	
Impact on Capabilities	This action will create a new capability for the Village and will advise residents and commuters about the risks of flooding in the area.	
Impact on Future Development:	Not applicable	
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events.	
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium
Alternatives	Action	Evaluation
	No action	Current problem remains
	Rent virtual message boards	Cost prohibitive

	Have staff act as flaggers to warn residents and commuters	May put staff at risk; staff may have other responsibilities
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Action 2024-SuffernV-06. Community Emergency Response Team (CERT)

Action Name:	2024-SuffernV-06. Community Emergency Response Team (CERT)		
Description of the Problem:	The Village has finite resources and staff to deploy during emergencies or related responses. The Village has also identified the need for more public outreach and education to inform the public on how to protect themselves during dam failures, disease outbreaks, droughts, earthquakes, extreme temperatures, floods, landslides, severe storms, severe winter storms, and wildfires. Establishing a educates residents about disaster preparedness and trains members in basic disaster response skills.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire	
Description of the Solution:	Develop a Community Emergency Response Team (CERT) to educate people about disaster preparedness and train citizen volunteers to assist their community when professional responders are not immediately available to help.		
Lead Agency:	Village Emergency Services		
Supporting Agencies:	Rockland County		
Estimated Cost:	Low		
Potential Funding Sources:	Village Budget		
Implementation Timeline:	Within 4 years		
Goals Met:	1, 2, 3, 5		
Benefits:	In addition to supporting emergency responders during a disaster, the CERT program builds strong working relationships between emergency responders and the people they serve. CERT program builds strong working relationships between emergency responders and the people they serve.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	One function of the CERT program is to provide assistance to those who may need it during an emergency or disaster event.		
Impact on Critical Facilities/Lifelines:	This action will enhance the safety and security lifelines as CERT teams also help the community year-round by helping with community emergency plans, neighborhood exercises, preparedness outreach, fire safety education, and workplace safety.		
Impact on Capabilities	This action will create a new capability for the Village which can be utilized before, during, and after an emergency.		
Impact on Future Development:	Not applicable		
Climate Change Considerations:	Climate change may result in an increase in the frequency and severity of weather-related disaster events. CER Teams can assist by providing volunteers to work with emergency responders and the public.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low

Alternatives	Action	Evaluation
	No action	Current problem remains
	Rely on career personnel	Staffing may be overworked
	Accept spontaneous volunteers	Difficult to manage and track

Action 2024-SuffernV-07. Sheltering Materials

Action Name:	2024-SuffernV-07. Sheltering Materials		
Description of the Problem:	Shelters may be activated during dam/levee failures, disease outbreaks, droughts, earthquakes, extreme temperatures, floods, landslides, severe storms, severe winter storms, and wildfires. There is limited timeframe from the point at which a shelter is activated to when it begins hosting occupants and offering services.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire	
Description of the Solution:	Develop emergency kits, purchase materials to accommodate pets, and install kitchen equipment, where needed, at shelters in the Village.		
Lead Agency:	Village Administration		
Supporting Agencies:	Rockland County, American Red Cross		
Estimated Cost:	High		
Potential Funding Sources:	FEMA HMGP and BRIC, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Village Budget		
Implementation Timeline:	Within 3 years		
Goals Met:	1, 2, 5		
Benefits:	This action protects public health and safety and ensures continued operation of a critical facility and its essential functions during an emergency.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	Socially vulnerable populations are often the most at-risk to hazards due to pre-existing conditions and socioeconomic status. Populations may not be able to evacuate during times of emergency and need a safe, nearby location to locate to.		
Impact on Critical Facilities/Lifelines:	This action will provide medical emergency kits at shelters in the Village for use by emergency responders.		
Impact on Capabilities	This action will enhance the Village’s sheltering capabilities, by providing a stocked location which can support resident’s needs.		
Impact on Future Development:	This action results in protection of a critical facility that could support future development.		
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related disaster events. Having an operable building with the proper equipment needed for continuity of operations will create a safe environment for those at risk.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem continues

	Build new facility	Cost prohibitive
	Accept donations for materials	Used items may not be sanitary

Action 2024-SuffernV-08. Mahwah River Watershed Management Group

Action Name:	2024-SuffernV-08. Mahwah River Watershed Management Group		
Description of the Problem:	When flooding occurs or intense precipitation leads to overflows during severe storms, excess water travels from the source of flooding into other tributaries and drainage channels in its watershed. Planning for flood issues at the watershed-level accounts for natural drainage capacities and access to other waterbodies and tributaries. Currently, there is no watershed management group for the Mahwah River.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	Establish a Mahwah River Watershed Management Group that will collectively address development pressures, stormwater runoff issues and flood control mitigation projects at a watershed (regional) scale. Coordination with the Rockland-Bergen Bi-state River Commission will be part of the group’s tasks.		
Lead Agency:	Village Administration		
Supporting Agencies:	Rockland County, Surrounding Jurisdictions, Rockland-Bergen Bi-state River Commission, NYS DEC		
Estimated Cost:	Staff time, Low		
Potential Funding Sources:	Village Budget		
Implementation Timeline:	Within 5 years		
Goals Met:	2, 3, 4, 5, 6		
Benefits:	This action will create a new, collaborative capability in the Village and in the region, which will assist in addressing issues in the Mahwah River Watershed, including flooding.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input checked="" type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input checked="" type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	The group forming as a result of this action will address themes which impact the total population of the Village. Input from the public will be welcomed to the Mahwah River Watershed Management Group.		
Impact on Critical Facilities/Lifelines:	The Mahwah River Watershed Management Group will discuss and address items connected to the water and utilities lifelines. Further, there may be crossover in topics which would protect or enhance the transportation and safety and security lifelines.		
Impact on Capabilities	This action will create a new, collaborative capability in the Village and in the region, which will assist in addressing issues in the Mahwah River Watershed, including flooding.		
Impact on Future Development:	This action may impact future development as outcomes from discussions could influence municipal code and ordinance changes.		
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events. The Mahwah River Watershed is likely to experience more rains and instances of flooding.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low

Alternatives	Action	Evaluation
	No action	Current problem remains
	Do not coordinate with Rockland-Bergen Bi-state River Commission	Key information and impacts will not be shared
	Address issues outside of the Mahwah River Watershed	Additional members would be needed, and agendas could lengthen significantly, although identifying issues outside of the Mahwah River Watershed may bring to light potential solutions

Action 2024-SuffernV-09. Green Infrastructure Study

Action Name:	2024-SuffernV-09. Green Infrastructure Study		
Description of the Problem:	The Village is susceptible to flooding due to severe storms in multiple areas. There is need to identify locations to implement green infrastructure practices and stormwater storage systems in the Village.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	Conduct a feasibility study to determine appropriate locations to implement green infrastructure practices and stormwater storage systems throughout Suffern.		
Lead Agency:	Village Administration		
Supporting Agencies:	NYS DEC		
Estimated Cost:	Medium		
Potential Funding Sources:	FEMA BRIC, HMGP, Village Budget		
Implementation Timeline:	Within 4 years		
Goals Met:	2, 6		
Benefits:	Overall flooding will be reduced, which will result in less frequency of road closures and reduced damage occurring to stormwater infrastructure and roadways during severe events. Businesses are likely to remain in place if they are able to remain open, or re-open sooner following a flood. Green infrastructure practices can help replenish groundwater reserves, relieving stress on local water supplies and reducing the need to import potable water.		
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	This action will assist socially vulnerable populations whose properties are impacted by flooding.		
Impact on Critical Facilities/Lifelines:	This action will add to the Village’s water and utilities infrastructure. Furthermore, transportation routes will be more likely to remain open and access to health and medical facilities will be maintained, both for healthcare workers and the population who requires treatment for injuries and illness by stormwater infrastructure moving the flow of floodwaters away and off of roadways.		
Impact on Capabilities	This action will strengthen the Village’s current stormwater management program by providing resilience and environmentally friendly stormwater management options.		
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.		
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation

	No action	Current problem remains
	Remove all infrastructure and install new green infrastructure with increased storage/flow capacity	Cost prohibitive
	Turn areas into green space and remove all infrastructure	Cost prohibitive, may displace residents and businesses

Action 2024-SuffernV-10. Chestnut Street Underpass Drainage Improvements

Action Name:	2024-SuffernV-10. Chestnut Street Underpass Drainage Improvements		
Description of the Problem:	The area near Chestnut Street underpass along Orange Avenue and Route 202 becomes inundated during periods of heavy rain.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	Install drainage improvements at the Chestnut Street underpass, along Orange Ave, and along US Route 202 to better protect these transportation assets and to ensure that emergency services have access to these areas.		
Lead Agency:	Village Public Works		
Supporting Agencies:	NYS DOT, NYS DEC, US FHA, Rockland County		
Estimated Cost:	Medium		
Potential Funding Sources:	FEMA BRIC, HMGP, Village Budget		
Implementation Timeline:	Within 4 years		
Goals Met:	2, 5		
Benefits:	Overall flooding will be reduced, which will result in less frequency of road closures and reduced damage occurring to drainage infrastructure and roadways during severe events.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	This action will assist socially vulnerable populations whose properties are impacted by flooding the drainage infrastructure.		
Impact on Critical Facilities/Lifelines:	This action identify options to improve drainage and flood prevention at the Chestnut Street underpass, along Orange Ave, and along US Route 202. Furthermore, transportation routes will be more likely to remain open and access to health and medical facilities will be maintained, both for healthcare workers and the population who requires treatment for injuries and illness.		
Impact on Capabilities	This action will upgrade the stormwater management capabilities of the Village.		
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.		
Climate Change Considerations:	Climate change is likely to result in more frequent and severe rainfall events. This action upsizes culvert sizes to meet changing stormwater needs as the result of climate change.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation

	No Action	-
	Remove roadway	Roadway cannot be removed
	Install rain gardens	Rain gardens are unlikely to be able to absorb enough stormwater to prevent flooding during severe rainfall events.

Action 2024-SuffernV-11. Sensitive Environments Program Development

Action Name:	2024-SuffernV-11. Sensitive Environments Program Development	
Description of the Problem:	There are environmentally sensitive areas in Mahwah River Watershed area. These areas may serve as natural flood buffers and be able to absorb precipitation during severe storms, mitigating the potential for flooding. If these areas are developed or removed, there may be an increase in flood risks in the Village.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	Coordinate between the Village, County, and State to develop an environmentally sensitive program to (1) clear the channels of the Mahwah and Ramapo Rivers by removing debris and detritus from their bed and banks as well as from the shores of Lake Antrim; (2) develop a program for the ongoing maintenance of these the rivers. Furthermore, conduct a comprehensive evaluation of the Mahwah River Watershed in conjunction with the Ramapo River Watershed to identify mitigation goals and associated performance metrics, assess existing conditions with respect to erosion and deposition patterns, identify local and watershed-scale stressors, understand patterns of channel evolution, and make recommendations regarding flood mitigation.	
Lead Agency:	Village Administration	
Supporting Agencies:	Rockland County, NYS DEC, Surrounding Jurisdictions	
Estimated Cost:	High	
Potential Funding Sources:	FEMA BRIC, NYSDEC Grants, Village Budget, Surrounding Jurisdictional Budgets	
Implementation Timeline:	Within 5 years	
Goals Met:	3, 4, 5, 6	
Benefits:	This coordinated action will provide cleaner waterways and waterbodies in the Village and its surrounding jurisdictions which the Mahwah and Ramap Rivers flow through, as well as the shores of Lake Antrim. Not only will this action beautify the waterways, but it will remove potentially hazardous debris from the waterways, protecting life and property should there be flooding conditions in the future.	
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input checked="" type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input checked="" type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	This action will benefit populations by removing potentially dangerous or hazardous debris from waterways and waterbodies in the Village, which could otherwise have negative impacts on the Village’s residents.	
Impact on Critical Facilities/Lifelines:	This action will make it safer for first responders to traverse in flood waters, if needed, as debris will be removed as a part of ongoing maintenance from this action.	
Impact on Capabilities	This action will result in a new capability for the Village, which would reduce impacts of floods and clear potentially hazardous debris from waterways.	
Impact on Future Development:	This action will benefit areas of future development by providing a clean aesthetic in the Village and removing potential debris from areas which could be used for future development.	

Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events. Heavier rains can result in increased erosion and debris in the waterways.		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action	Evaluation	
	No action	Current problem remains	
	Coordinate only with surrounding jurisdictions	May not have jurisdiction to enter waterbodies	
	Coordinate only with the County and State	Debris up and/or downstream will still impact the waterbodies in the Village	

Action 2024-SuffernV-12. Lake Antrim Flood Improvements

Action Name:	2024-SuffernV-12. Lake Antrim Flood Improvements		
Description of the Problem:	The Lake Antrim area is prone to flooding following heavy rains.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	Restore Lake Antrim by designing and installing improvements to the surrounding bank and floodplain.		
Lead Agency:	Village Administration		
Supporting Agencies:	Village Engineering, Rockland County, NY DEC		
Estimated Cost:	High		
Potential Funding Sources:	FEMA BRIC, HGMP, Village Budget		
Implementation Timeline:	Within 5 years		
Goals Met:	1, 2		
Benefits:	This action would reduce the flooding impacts felt by the Village from Lake Antrim.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input checked="" type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input checked="" type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	This action will assist socially vulnerable populations whose properties are impacted by flooding from Lake Atrium. Furthermore, this action will assist in keeping roadways clear of flood waters for the populations which may need to attend medical appointments or require medical attention from first responders.		
Impact on Critical Facilities/Lifelines:	This action would assist in the reduction of roadway flooding from Lake Atrium, permitting first responders to traverse the roadways safely.		
Impact on Capabilities	Not applicable		
Impact on Future Development:	Future development surrounding Lake Atrium will experience fewer impacts from flood and heavy rain events.		
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem remains
	Raise banks of lake to increase storage capacity		Cost prohibitive

	Construct floodwall along lake	Cost prohibitive
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Action 2024-SuffernV-13. Lonegran Drive Drainage Improvements

Action Name:	2024-SuffernV-13. Lonegran Drive Drainage Improvements		
Description of the Problem:	Areas of Lonegran Drive, downtown business district, and the ballfield are prone to flooding and overflows due to heavy rains.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	Identify different options to improve drainage and flood prevention in the areas of Lonegran Drive, downtown business district, and ballfield.		
Lead Agency:	Village Public Works		
Supporting Agencies:	Engineering		
Estimated Cost:	Medium		
Potential Funding Sources:	FEMA BRIC, HMGP, Village Budget		
Implementation Timeline:	Within 4 years		
Goals Met:	2, 5		
Benefits:	Overall flooding will be reduced, which will result in less frequency of road closures and reduced damage occurring to drainage infrastructure and roadways during severe events. Businesses are likely to remain in place if they are able to remain open, or re-open sooner following a flood.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	This action will assist socially vulnerable populations whose properties are impacted by flooding the drainage infrastructure.		
Impact on Critical Facilities/Lifelines:	This action identify options to improve drainage and flood prevention in the areas of Lonegran Drive, downtown business district, and ballfield. Furthermore, transportation routes will be more likely to remain open and access to health and medical facilities will be maintained, both for healthcare workers and the population who requires treatment for injuries and illness.		
Impact on Capabilities	This action will upgrade the stormwater management capabilities of the Village.		
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.		
Climate Change Considerations:	Climate change is likely to result in more frequent and severe rainfall events. This action upsizes culvert sizes to meet changing stormwater needs as the result of climate change.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation

	No Action	-
	Remove roadway	Roadway cannot be removed
	Raingardens	Raingardens are unlikely to be able to absorb enough stormwater to prevent flooding during severe rainfall events.

Action 2024-SuffernV-14. Emergency Response Plan Update

Action Name:	2024-SuffernV-14. Emergency Response Plan Update		
Description of the Problem:	Individuals may require additional or different support and resources to be able to implement the Village’s emergency response plan. For instance, individuals that have mobility issues or depend on medical equipment may be unable to evacuate on their own during a dam/levee failure, earthquakes, flood, landslide, landslide, severe winter storm, or wildfire. Those with underlying medical conditions may require additional protective and precautionary measures to mitigate the risks from disease outbreaks, droughts, and extreme temperatures.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire	
Description of the Solution:	Work with Rockland County to obtain access to the functional-needs registry and enhance emergency response plans for the Village.		
Lead Agency:	Village Administration		
Supporting Agencies:	Rockland County		
Estimated Cost:	Low		
Potential Funding Sources:	Village Budget		
Implementation Timeline:	1 year		
Goals Met:	1, 3, 5		
Benefits:	The Village will have the location of registered members of the socially vulnerable population as well as any emergency or medical information the registrant was willing to share.		
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	Socially vulnerable populations are able to register to the functional-needs registry to have important emergency and medical information stored in a secure system for first responders.		
Impact on Critical Facilities/Lifelines:	This action allows first responders to understand the emergency and medical needs of registered individuals should assistance be needed.		
Impact on Capabilities	This action will update an already existing planning capability of the Village.		
Impact on Future Development:	Future development will be protected by the Emergency Response Plan.		
Climate Change Considerations:	As impacts from climate change are increasingly felt, the contents in an Emergency Response Plan, including in the basic plan and any annexes, may need to be updated.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation

	No action	Vulnerable populations will remain unknown
	Do not download information	Population information will not be available to the Village
	Create new system	Cost and start-up restraints

Action 2024-SuffernV-15. GIS Online Mapping

Action Name:	2024-SuffernV-15. GIS Online Mapping	
Description of the Problem:	Hazard spatial boundaries are not made publicly available on the Village’s website. It is important to residents to know whether they live or work in an area exposed to dam/levee failures, floods, severe storms, severe winter storms, earthquakes, extreme temperatures, landslides, and wildfires, so they can implement mitigation activities and prepare themselves as necessary.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	Work with the Stormwater Consortium of Rockland County and the County Planning Department to expand and disseminate GIS and other hazard information on the internet.	
Lead Agency:	Village Administration	
Supporting Agencies:	Rockland County	
Estimated Cost:	Low	
Potential Funding Sources:	Village Budget	
Implementation Timeline:	Within 2 years	
Goals Met:	3, 5, 7	
Benefits:	This action will benefit the Village as it will permit the creation of maps, analysis of hazards, and information sharing opportunities with local and county agencies.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	GIS systems may provide the Village with the opportunity to create maps showing where socially vulnerable populations reside in the Village, which could be shared with first responders.	
Impact on Critical Facilities/Lifelines:	This action will bolster the safety and security lifeline.	
Impact on Capabilities	This action will add a new capability to the Village and bolster the County’s current GIS capabilities.	
Impact on Future Development:	GIS systems would allow for in depth land analysis to assist in determining where future land use could be prohibited or encouraged.	

Climate Change Considerations:	Climate change may result in an increase in the frequency and severity of weather-related disaster events. Utilizing GIS technology to update hazard risk analyses will increase the resilience of the Village, its residents, and first responders.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem remains
	Use ArcOnline		Limited mapping and analysis capabilities
	Contract for GIS services		May experience information-sharing complications with the Stormwater Consortium of Rockland County and the County Planning Department

Action 2024-SuffernV-16. Mahwah River Bank Flood Mitigation

Action Name:	2024-SuffernV-16. Mahwah River Bank Flood Mitigation		
Description of the Problem:	The Mahwah River Bank, along Memorial Drive has signification erosion as a result of flooding from past storms. As a result, the roadway has been closed.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	Work with partnering agencies to identify feasible mitigation measures to provide relief from flooding impacts caused by the Mahwah River along Memorial Drive. Cost effective measures will be implemented.		
Lead Agency:	Village Public Works		
Supporting Agencies:	Rockland County, Village Administration, FEMA		
Estimated Cost:	High		
Potential Funding Sources:	FEMA BRIC, HMGP		
Implementation Timeline:	5 years		
Goals Met:	2		
Benefits:	This action would reduce the flooding impacts felt by the Village from the Mahwah River along Memorial Drive.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	This action will assist socially vulnerable populations whose properties are impacted by flooding from the Mahwah River along Memorial Drive. Furthermore, this action will assist in keeping roadways clear of flood waters for the populations which may need to attend medical appointments or require medical attention from first responders.		
Impact on Critical Facilities/Lifelines:	This action would assist in the reduction of roadway flooding from the Mahwah River along Memorial Drive, permitting first responders to traverse the roadways safely.		
Impact on Capabilities	Not applicable		
Impact on Future Development:	Future development along Memorial Drive would experience reduced flooding impacts from the Mahwah River.		
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem remains

	Raise banks of river to increase storage capacity	Cost prohibitive
	Construct floodwall along river	Cost prohibitive

Action 2024-SuffernV-17. Dam Owner Partnership

Action Name:	2024-SuffernV-17. Dam Owner Partnership		
Description of the Problem:	There are two dams (Lake Antrim Dam and Ramapo Cirque Dam), which are critical facilities, located in the 1- and 0.2-percent flood hazard areas that contain or are adjacent to existing residential areas. The municipality does not own all the dams in its jurisdictions and cannot itself implement mitigation actions to the structures.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	Work with the owners of the dams to ensure inspections and safety procedures are up to date. Identify mitigation actions to ensure the integrity of the dams and that it is protected up to the 0.2-percent flood hazard area.		
Lead Agency:	Village Emergency Services		
Supporting Agencies:	Village Administration, Dam Owners, NYSDEC		
Estimated Cost:	Low		
Potential Funding Sources:	Village Budget		
Implementation Timeline:	Within 5 years		
Goals Met:	1, 2, 3, 5		
Benefits:	This action will improve the safety and security of those who live within the dam inundation areas of the dams and increase the resilience of responding agencies. It will also increase communication between the municipality and the dam owners, which can be important during hazard events or other emergencies.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	The action will result in better preparedness within the Special Flood Hazard Area and inundation areas where significant risk to socially vulnerable populations exists.		
Impact on Critical Facilities/Lifelines:	Dams are considered a critical facility. This action will create an understanding of the safety procedures in place for each identified dam.		
Impact on Capabilities	This action will improve planning and response capabilities through the understanding of responsibilities and procedures.		
Impact on Future Development:	Depending on the result of this partnership, future development near the dams may be provided with better protection from dam failure events due to improved procedures and communication, as well as any physical improvements to the structures.		
Climate Change Considerations:	Climate change may result in an increase in the frequency and severity of weather-related disaster events, which may contribute to the likelihood of a dam failure event. This action will increase the capabilities to respond to these events.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation

	No Action	Village will be unaware of any safety concerns for the dam or its condition
	Utilize information from NYSDEC	Owners may not be required to submit a safety plan to the State
	Utilize information from the National Inventory of Dams	Not all dams are listed on the inventory

Action 2024-SuffernV-18. Physical Protective Measures at the Wastewater Treatment Plant

Action Name:	2024-SuffernV-18. Physical Protective Measures at the Wastewater Treatment Plant		
Description of the Problem:	The Wastewater Treatment Plant is located in the floodplain and is not protected to the 500-year flood or worst-case scenario. This elevates the risk of potential damage or serve interruption at the plant during a flood.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The Village will install a proposed flood wall at Wastewater Treatment Plant projected completed date during Second Quarter of 2024.		
Lead Agency:	Village Administration		
Supporting Agencies:	Wastewater Treatment Plant Facility Manager		
Estimated Cost:	High		
Potential Funding Sources:	Village Budget		
Implementation Timeline:	Within 1 year		
Goals Met:	2, 5		
Benefits:	This action will remove or reduce critical facility and community lifeline vulnerability to the flood hazard and remove or reduce safety risks for first responders.		
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	Retrofitting or relocating the identified structures will benefit socially vulnerable populations, as individuals within these populations rely on resources from various government facilities, transportation facilities, and medical and senior care facilities.		
Impact on Critical Facilities/Lifelines:	Noting the number of facilities located within the flood hazard area may encourage the consideration of relocating critical facilities and lifelines from the flood hazard area and deter the development of any additional facilities in the flood hazard area.		
Impact on Capabilities	This action will reduce the Village’s wastewater treatment plant’s risk to the flood hazard, enhancing its capabilities.		
Impact on Future Development:	Noting the number of facilities located within the flood hazard area may encourage the consideration of relocating critical facilities and lifelines from the flood hazard area and deter the development of any additional facilities in the flood hazard area.		
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events, which could lead to more flooding events.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No Action		Current problem remains

	Floodproof existing structure	May not necessarily reduce risk
	Deployable flood barriers for vulnerable areas	Requires deployment. The facility manager may not have adequate time to deploy.

SECTION 9. JURISDICTIONAL ANNEXES

9.22 VILLAGE OF UPPER NYACK

This jurisdictional annex to the Rockland County Hazard Mitigation Plan (HMP) provides information to assist public and private sectors in the Village of Upper Nyack with reducing losses from future hazard events. This annex is not guidance of what to do when a disaster occurs; its focus is on actions that can be implemented prior to a disaster to reduce or eliminate damage to property and people. The annex presents a general overview of the Village of Upper Nyack, describes who participated in the planning process, assesses the Village’s risk, vulnerability, and capabilities, and outlines a strategy for achieving a more resilient community.

9.22.1 Hazard Mitigation Planning Team

The Village of Upper Nyack identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Village departments. The Village Clerk represented the community on the Rockland County HMP Planning Partnership and Steering Committee and supported the local planning process requirements by securing input from persons with specific knowledge to enhance the plan. All departments were asked to contribute to the annex development through reviewing and contributing to the capability assessment, reporting on the status of previously identified actions, and participating in action identification and prioritization.

Table 9.22-1 summarizes Village officials who participated in the development of the annex and in what capacity. Additional documentation of the Village’s planning activities through Planning Partnership meetings is included in Volume I.

Table 9.22-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Georgia Grandstaff, Village Clerk Address: 328 N. Broadway, Upper Nyack, NY 10960 Phone Number: (845) 358-0084 Email: village.clerk@uppernyack-ny.us	Name/Title: Dennis Letson, P.E., Village Engineer Address: 328 N. Broadway, Upper Nyack, NY 10960 Phone Number: (845) 358-0084 Ext: 7 Email: village.engineer@uppernyack-ny.us
National Flood Insurance Program Floodplain Administrator	
Name/Title: Dennis Letson, P.E., Village Engineer Address: 328 N. Broadway, Upper Nyack, NY 10960 Phone Number: (845) 358-0084 ext. 7 Email: village.engineer @uppernyack-ny.us	
Additional Contributors	
Name/Title: Dennis Letson, P.E., Village Engineer Method of Participation: Completed mitigation strategies, hazard history, and NFIP surveys; reviewed draft annex	
Name/Title: Georgia Grandstaff, Village Clerk Method of Participation: Reviewed draft annex	

9.22.2 Municipal Profile

The Village of Upper Nyack is located within the Town of Clarkstown, along the eastern border of Rockland County. The Village is bordered to the north and west by the Town of Clarkstown, to the south by the Village of Nyack, and

to the east by the Hudson River (Rockland County 2018). The Village has a total area of 4.2 square miles, of which, 1.3 square miles is land, and 2.9 square miles is water. The Hudson River is a major body of water found within the Village.

Research has shown that some populations are at greater risk from hazard events because of decreased resources or physical abilities. These populations can be more susceptible to hazard events based on a number of factors including their physical and financial ability to react or respond during a hazard, and the location and construction quality of their housing. Data from the 2017-2021 American Community Survey indicates that 3.7 percent of the population is five years of age or younger, 20.3 percent is 65 years of age or older, 0.8 percent is non-English speaking, 7.2 percent is below the poverty threshold, and 6.8 percent is considered disabled.

9.22.3 Jurisdictional Capability Assessment and Integration

The Village of Upper Nyack performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Volume I describes the components included in the capability assessment and their significance for hazard mitigation planning. The jurisdictional assessment for this annex includes analyses of the following:

- Planning and regulatory capabilities
- Development and permitting capabilities
- Administrative and technical capabilities
- Fiscal capabilities
- Education and outreach capabilities
- Classification under various community mitigation programs
- Adaptive capacity to withstand hazard events

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into day-to-day local government operations. As part of the hazard mitigation analysis, planning and policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress toward plan integration. Development of an updated mitigation strategy provided an opportunity for the Village of Upper Nyack to identify opportunities for integration of mitigation concepts that can be incorporated into municipal procedures.

Planning, Legal, and Regulatory Capability and Integration

Table 9.22-2 summarizes the regulatory tools that are available to Village of Upper Nyack.

Table 9.22-2. Planning, Legal, and Regulatory Capability and Integration

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Codes, Ordinances, & Regulations				
Building Code	Yes	Chapter 140 Building Construction and Code Enforcement (Uniform Code Enforcement Law (LL 6 of 2022))	State, Local	Building Inspector
<p><i>How has or will this be integrated with the HMP and how does this reduce risk?</i></p> <p>This local law provides for the administration and enforcement of the New York State Uniform Fire Prevention and Building Code and the State Energy Conservation Construction Code in the Village of Upper Nyack. This local law is adopted pursuant to section 10 of the Municipal Home Rule Law. Except as otherwise provided in the Uniform Code, other state law, or other section of this local law, all buildings, structures, and premises, regardless of use or occupancy, are subject to the provisions of this local law. The Chief Building Inspector shall determine the climatic and geographic design criteria for buildings and structures constructed within this Village as required by the Uniform Code. The criteria shall include, but is shall not necessarily be limited to include design criteria for withstanding seismic activity and winter hazards and related to whether it is in flood hazard areas.</p>				
Zoning/Land Use Code	Yes	Chapter 360 Zoning (2022 Zoning Law (LL 5 of 2022))	Local	Planning Board, Zoning Board
<p><i>How has or will this be integrated with the HMP and how does this reduce risk?</i></p> <p>This Village has adopted this chapter for the purposes set forth in § 7-700 of the Village Law of the State of New York, which, in the interest of the protection and promotion of the public health, safety and welfare. Among these purposes include encouraging development that accommodates sustainable development techniques, like solar energy systems, and accommodating growth and development. The code establishes a Waterfront Development District to provide for and encourage uses along and near the Hudson River, and this district shall encourage soft or vegetated shorelines and rip rap, instead of vertical sheet pile bulkheads, to provide resilience to sea level rise, storm surge, and flooding. Additionally, this district’s maximum residential units must subtract the land below normal high-water line of the Hudson and within floodways or coastal high-hazard areas from the gross acreage of the site.</p>				
Subdivision Code	Yes	Chapter 360 Zoning, Article V Administration (Subdivision Law (LL 2 of 2022))	Local	Planning Board
<p><i>How has or will this be integrated with the HMP and how does this reduce risk?</i></p> <p>It is declared to be the Policy of the Planning Board to consider land subdivision regulations as part of a plan for the orderly, efficient, and economical development of the Village. This means, among other things, that land to be subdivided shall be of such character that it can be used safely for building purposes without danger to health or peril from fire, flood or other menace; that proper provision shall be made for drainage, water supply, sewerage and other needed improvements; that all proposed lots shall be so laid out and of such size as to be in harmony with the development pattern of the neighboring properties; that the proposed street pattern shall conform to the Official Zoning Map and shall be properly related to the proposals shown on the Master Plan and shall be of such width, grade and location as to accommodate the prospective traffic, to facilitate fire protection and to provide access of fire-fighting equipment to buildings; and that proper provision shall be made for parks and playgrounds.</p>				
Site Plan Code	Yes	Chapter 360 Zoning, Article V Administration (Section 10, 2022 Zoning Law (LL 5 of 2022))	Local	Planning Board
<p><i>How has or will this be integrated with the HMP and how does this reduce risk?</i></p> <p>The purpose of the site development plan process is to ensure compliance with the development and design standards and provisions of this code, and to encourage quality development reflective of the goals, policies, and objectives of the Village Comprehensive Master Plan.</p>				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Stormwater Management Code	Yes	Chapter 295 Stormwater Management (Stormwater Management and Erosion and Sediment Control (LL 4 of 2022))	Local	Village Engineer, Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The purpose of this chapter and Chapter 360, Zoning, § 360-4.12 is to establish minimum stormwater management requirements and controls to protect and safeguard the general health, safety, and welfare of the public residing within this jurisdiction. Among several stated objectives, the ordinance aims to minimize increases in the rate and volume of stormwater runoff due to land development activities.				
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Real Estate Disclosure	Yes	New York State (NYS) mandate, Property Condition Disclosure Act, NY Code – Article 14 §460-467	State, Local	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The NYS mandate requires sellers to disclose to potential buyers whether their property is located in a designated floodplain.				
Growth Management	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Environmental Protection Ordinance(s)	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Flood Damage Prevention Ordinance	Yes	Chapter 205 Flood Damage Prevention (Ordinance 8.6 Flood Damage Prevention (LL 2 of 2014))	Federal, State, Local	Village Engineer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> It is the purpose of this chapter to promote the public health, safety, and general welfare and to minimize public and private losses due to flood conditions in specific areas. The ordinance requires both new residential and non-residential construction and substantial improvements to be built with two feet of freeboard.				
Wellhead Protection	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Emergency Management Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Climate Change Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Other: Freeboard	Yes	Chapter 205 Flood Damage Prevention (Ordinance 8.6 Flood Damage Prevention (LL 2 of 2014) NYS Building & Residential Codes)	State, Local	Village Engineer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> New York State requires new one- and two-family residences to be built with two feet of freeboard and all other construction types with one foot of freeboard. The Village’s Flood Damage Prevention Ordinance exceeds this standard by requiring both new residential and non-residential construction and substantial improvements to be built with two feet of freeboard.				
Other: Cumulative Substantial Damage	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Planning Documents				
General/Comprehensive Plan	Yes	The Village of Upper Nyack Comprehensive Plan (2021)	Local	Village Board, Planning Board, Zoning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Village’s Comprehensive Plan identifies 10 topic areas for discussion to be considered the primary land-use, planning, growth and development issues of the Village. One of these topic areas is climate planning and resilience. The Village aims to become a more climate-resilient community by protecting open spaces and undeveloped lands, maintaining and protecting environmentally sensitive areas and natural resources, mitigating the negative impacts of storm water runoff, practice water conservation & re-use e, reduce the Village carbon footprint, encourage alternative energy systems and energy conservation methods.				
Capital Improvement Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Disaster Debris Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Floodplain Management or Watershed Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Stormwater Management Plan	Yes	Stormwater Management Plan (2021)	Local	Department of Public Works, Village Engineer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The purpose of the plan is to ensure the reduction of Pollutants of Concern (POCs), identified herein, from stormwater discharges to the Maximum Extent Practicable (MEP).				
Open Space Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Urban Water Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Habitat Conservation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Economic Development Plan	No	-	-	-

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Community Wildfire Protection Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Community Forest Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Transportation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Agriculture Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Climate Action/Resiliency/Sustainability Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Tourism Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Business/ Downtown Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Other (for example NYRCR, etc.)	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Response/Recovery Planning				
Comprehensive Emergency Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Continuity of Operations Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Substantial Damage Response Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Threat & Hazard Identification & Risk Assessment	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Post-Disaster Recovery Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Public Health Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

Development and Permitting Capability

Table 9.22-3 summarizes the capabilities of Village of Upper Nyack to oversee and track development.

Table 9.22-3. Development and Permitting Capability

Indicate if your jurisdiction implements the following	Yes/No	Comment:
Do you issue development permits? <ul style="list-style-type: none"> If you issue development permits, what department is responsible? If you do not issue development permits, what is your process for tracking new development? 	Yes	Building Department
Are permits tracked by hazard area? (For example, floodplain development permits.)	Yes	Floodplain development
Do you have a buildable land inventory? <ul style="list-style-type: none"> If you have a buildable land inventory, please describe 	No	-
Describe the level of build-out in your jurisdiction.	N/A	Any future development in the Village is limited. The potential for future development exists primarily in residentially zoned areas, which do not include areas for conservation.

Administrative and Technical Capability

Table 9.22-4 summarizes potential staff and personnel resources available to Village of Upper Nyack and their current responsibilities that contribute to hazard mitigation.

Table 9.22-4. Administrative and Technical Capabilities

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
<i>Administrative Capability</i>		
Planning Board	Yes	Planning Board
Zoning Board of Adjustment	Yes	Zoning Board of Appeals
Planning Department	No	-

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
Mitigation Planning Committee	Yes	The Upper Nyack Green Committee is an advocacy group of Upper Nyack residents working toward the environmental health of our village through strategies of mitigation, adaptation, and resiliency in the face of climate change. It acts as an independent advisory group to the Upper Nyack Village Board of Trustees and as an educational resource for the citizens of the Village.
Environmental Board/Commission	No	-
Open Space Board/Committee	No	-
Economic Development Commission/Committee	No	-
Public Works/Highway Department	Yes	Department of Public Works
Construction/Building/Code Enforcement Department	Yes	The Building Department, headed by the Building Inspector, administers and enforces all of the provisions and laws applicable to the Uniform and Energy Code.
Emergency Management/Public Safety Department	No	-
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	No	-
Mutual aid agreements	No	-
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	No	-
Other: Upper Nyack Green Committee	Yes	The Green Committee is an advocacy group of Upper Nyack residents working toward the environmental health of our village through strategies of mitigation, adaptation, and resiliency in the face of climate change. It acts as an independent advisory group to the Upper Nyack Village Board of Trustees and as an educational resource for the citizens of the Village.
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Village Engineer
Engineers or professionals trained in building or infrastructure construction practices	Yes	Village Engineer
Planners or engineers with an understanding of natural hazards	Yes	Village Engineer
Staff with expertise or training in benefit/cost analysis	Yes	Village Engineer
Professionals trained in conducting damage assessments	Yes	Village Engineer
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	Yes	Village Engineer
Environmental scientist familiar with natural hazards	No	-
Surveyor(s)	No	-
Emergency Manager	No	-
Grant writer(s)	No	-
Resilience Officer	No	-

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
Other (this could include stormwater engineer, environmental specialist, etc.)	No	-

Fiscal Capability

Table 9.22-5 summarizes financial resources available to Village of Upper Nyack.

Table 9.22-5. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use? (Yes/No)
Community Development Block Grants (CDBG, CDBG-DR)	Yes, Village Board
Capital improvements project funding	Yes, Village Board
Authority to levy taxes for specific purposes	Yes, Village Board
User fees for water, sewer, gas or electric service	No
Impact fees for homebuyers or developers of new development/homes	No
Stormwater utility fee	No
Incur debt through general obligation bonds	Yes, Village Board
Incur debt through special tax bonds	No
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	Yes
Other federal or state Funding Programs	Yes
Open Space Acquisition funding programs	No
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	No

Education and Outreach Capability

Table 9.22-6 summarizes the education and outreach resources available to Village of Upper Nyack.

Table 9.22-6. Education and Outreach Capabilities

Outreach Resources	Available? (Yes/No)	Comment:
Public information officer or communications office	No	-
Personnel skilled or trained in website development	Yes	Contracted
Hazard mitigation information available on your website	Yes	The Village posts news updates on its website to provide residents with information regarding the Village; these updates can include information and warnings for upcoming storm events.
Social media for hazard mitigation education and outreach	Yes	The Village has a Facebook page which can be used for hazard mitigation education and outreach.
Citizen boards or commissions that address issues related to hazard mitigation	Yes	Upper Nyack Green Committee
Warning systems for hazard events	Yes	The County utilizes NY-Alert and CodeRed (the backup to NY-Alert) for emergency notifications (all Towns and Villages have access to it).
Natural disaster/safety programs in place for schools	No	-

Outreach Resources	Available? (Yes/No)	Comment:
Organizations that conduct outreach to socially vulnerable populations and underserved populations	No	-
Public outreach mechanisms / programs to inform citizens on natural hazards, risk, and ways to protect themselves during such events	Yes	See below.
If yes, please describe.	N/A	The Village posts news updates on its website to provide residents with information regarding the Village; these updates can include information and warnings for upcoming storm events. The Village provides informational materials for stormwater management, including green infrastructure, pollution control, and hazardous waste disposal at locations throughout the town; these materials came from Village Hall and Cornell Cooperative Extension Offices. Information is also posted upon public bulletin boards.

Community Classifications

Table 9.22-7 summarizes classifications for community programs available to Village of Upper Nyack.

Table 9.22-7. Community Classifications

Program	Participating? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	No	-	-
New York State Department of Environmental Conservation (NYSDEC) Climate Smart Community	Yes	None	8/5/2021
National Weather Service Storm Ready Certification	No	-	-
Firewise Communities classification	No	-	-
Other: Organizations with mitigation focus (advocacy group, non-government)	Yes	N/A	N/A

N/A = Not applicable
 — = Unavailable

Adaptive Capacity

Adaptive capacity is defined as “the ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or respond to consequences” (IPCC 2022). Each jurisdiction has a unique combination of capabilities to adjust to, protect from, and withstand a future hazard event, future conditions, and changing risk. Table 9.22-8 summarizes the adaptive capacity for each identified hazard of concern and the Village’s capability to address related actions using the following classifications:

- Strong: Capacity exists and is in use.
- Moderate: Capacity might exist; but is not used or could use some improvement.
- Weak: Capacity does not exist or could use substantial improvement.

Table 9.22-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Disease Outbreak	Moderate
Drought	Moderate
Earthquake	Moderate
Extreme Temperature	Moderate
Flood	Moderate
Landslide	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

9.22.4 National Flood Insurance Program Compliance

This section provides specific information on the management and regulation of the regulatory floodplain, including current and future compliance with the National Flood Insurance Program (NFIP). The floodplain administrator listed in Table 9.22-1 is responsible for maintaining this information.

NFIP Summary

Table 9.22-9 summarizes the NFIP statistics for Village of Upper Nyack.

Table 9.22-9. Village of Upper Nyack NFIP Summary of Policy and Claim Statistics

# Policies	13
# Claims (Losses)	13
Total Loss Payments	\$227,317
# Repetitive Loss Properties (NFIP definition)	1
# Repetitive Loss Properties (FMA definition)	1
# Severe Repetitive Loss Properties	1
# Policies Within the 1 percent Annual Chance Flood Boundary	1

NFIP Definition of Repetitive Loss: The NFIP defines a repetitive loss property as any insurable building for which two or more claims of more than \$1,000 were paid by the NFIP within any rolling 10-year period since 1978.

FMA Definition of Repetitive Loss: FEMA’s Flood Mitigation Assistance (FMA) program defines a repetitive loss property as any insurable building that has incurred flood-related damage on two occasions, in which the cost of the repair, on average, equaled or exceeded 25 percent of the market value of the structure at the time of each such flood event.

Definition of Severe Repetitive Loss: A residential property covered under an NFIP flood insurance policy and: (a) That has at least four NFIP claim payments over \$5,000 each, and the cumulative amount of such claims payments exceeds \$20,000; or (b) For which at least two separate claims payments have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building. At least two of the claims must have occurred within any 10-year period, more than 10 days apart.

Source: FEMA, December 2023

Note: RL count may include properties also identified as SRL.

Flood Vulnerability Summary

Table 9.22-10 provides a summary of the NFIP program in Village of Upper Nyack.

Table 9.22-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	Hudson River, Crumby Creek, several roadways.
Do you maintain a list of properties that have been damaged by flooding?	Flood damages have been recorded as have happened, generally by institutional memory.
Do you maintain a list of property owners interested in flood mitigation?	No
How many homeowners and/or business owners are interested in mitigation (elevation or acquisition)?	Unknown at this time
Are any RiskMAP projects currently underway in your jurisdiction? <ul style="list-style-type: none"> If so, state what projects are underway. 	No
How do you make Substantial Damage determinations? <ul style="list-style-type: none"> How many were declared for recent flood events in your jurisdiction? 	N/A*
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	N/A
How many properties have been mitigated (elevation or acquisition) in your jurisdiction? <ul style="list-style-type: none"> If there are mitigation properties, how were the projects funded? 	None
Do your flood hazard maps adequately address the flood risk within your jurisdiction? <ul style="list-style-type: none"> If not, state why. 	No, no mapped floodplains except the Hudson River. Additional streams should be modeled in the next map update.
NFIP Compliance	
What local department is responsible for floodplain management?	Village Engineer
Are any certified floodplain managers on staff in your jurisdiction?	No
Do you have access to resources to determine possible future flooding conditions from climate change?	No
Does your floodplain management staff need any assistance or training to support its floodplain management program? <ul style="list-style-type: none"> If so, what type of assistance/training is needed? 	Yes, assistance from Village Engineer on technical issues.
Provide an explanation of NFIP administration services you provide (e.g., permit review, GIS, education/outreach, inspections, engineering capability)	Permit review, inspections, engineering analysis, mitigation design
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	Based on FEMA guidelines
What are the barriers to running an effective NFIP program in the community, if any?	None
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? <ul style="list-style-type: none"> If so, state the violations. 	No
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	March 7, 2013
What is the local law number or municipal code of your flood damage prevention ordinance?	Chapter 205 (Ordinance 8.6 Flood Damage Prevention (LL 2 of 2014))

NFIP Topic	Comments
What is the date that your flood damage prevention ordinance was last amended?	February 20, 2014
Does your floodplain management program meet or exceed minimum requirements? <ul style="list-style-type: none"> If exceeds, in what ways? 	Meets minimum requirements.
Are there other local ordinances, plans or programs (e.g., site plan review) that support floodplain management and meeting the NFIP requirements? For instance, does the planning board or zoning board consider efforts to reduce flood risk when reviewing variances such as height restrictions?	No
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	No

Note: *The Village reported it does not have a process to make substantial damage determinations; however, during this planning process, it was confirmed that substantial damage determination provisions are established in both the adopted NFIP ordinance and adopted building code. This response has not been changed to accurately reflect the tools leveraged by the Village to mitigate risks.

9.22.5 Growth/Development Trends

Understanding how past, current, and projected development patterns have or are likely to increase or decrease risk in hazard areas is a key component to appreciating a jurisdiction’s overall risk to its hazards of concern. Recent and expected future development trends, including major residential/commercial development and major infrastructure development, are summarized in Table 9.22-11 through Table 9.22-13.

Table 9.22-11. Number of Building Permits for New Construction Issued Since the Previous HMP

	New Construction Permits Issued			Total
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	
2019				
Total Permits	2	0	0	2
Permits within SFHA	0	0	0	0
2020				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2021				
Total Permits	1	0	0	1
Permits within SFHA	0	0	0	0
2022				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2023				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0

SFHA = Special Flood Hazard Area (1 percent flood event)

Table 9.22-12. Recent Major Development and Infrastructure from 2018 to Present

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
The Village has had no recent major development or infrastructure between 2018 to present.					

* Only location-specific hazard zones or vulnerabilities identified.

Table 9.22-13. Known or Anticipated Major Development and Infrastructure in the Next Five Years

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
There are no known or anticipated major development of infrastructure in the Village in the next five years.					

* Only location-specific hazard zones or vulnerabilities identified.

9.22.6 Jurisdictional Risk Assessment

The hazard profiles in Volume I provide detailed information regarding each planning partner’s vulnerability to the identified hazards, including summaries of the Village of Upper Nyack’s risk assessment results and data used to determine the hazard ranking. Key local risk assessment information is presented below.

Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Village are shown in Figure 9.22-1 through Figure 9.22-2. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps are provided only for hazards that can be identified clearly using mapping techniques and technologies and for which Upper Nyack has significant exposure. The maps show the location of potential new development, where available.

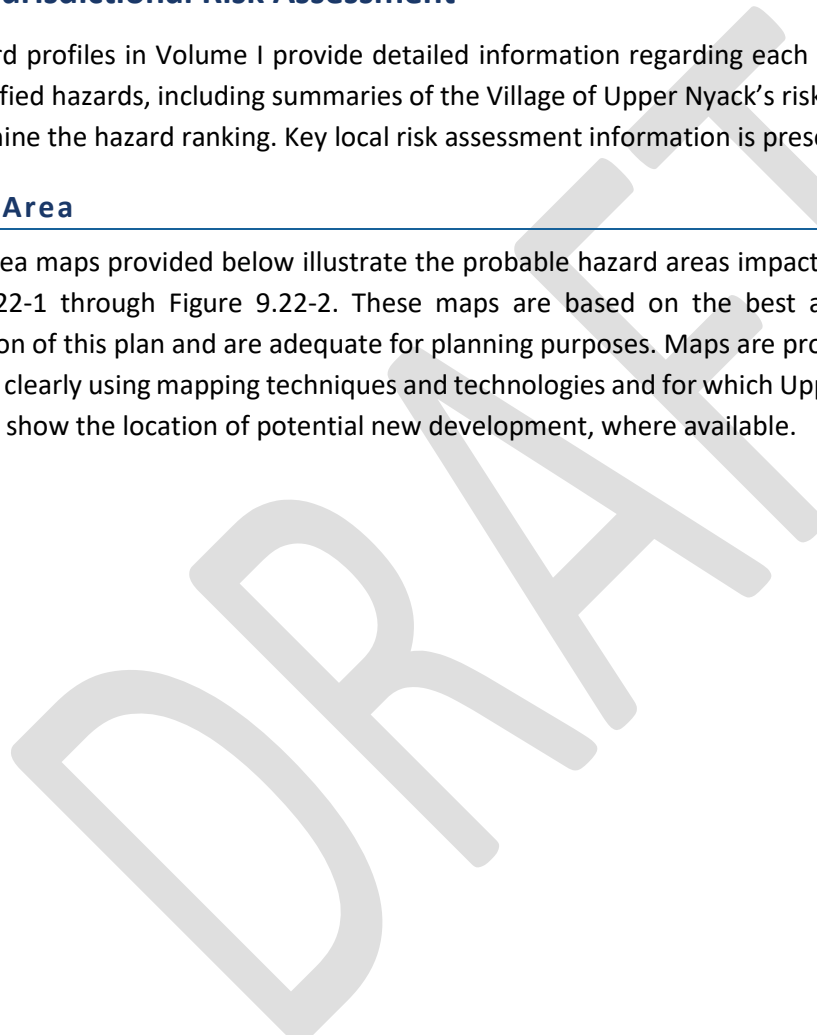


Figure 9.22-1. Village of Upper Nyack Flood and Dam Inundation Hazard Area Extent and Location

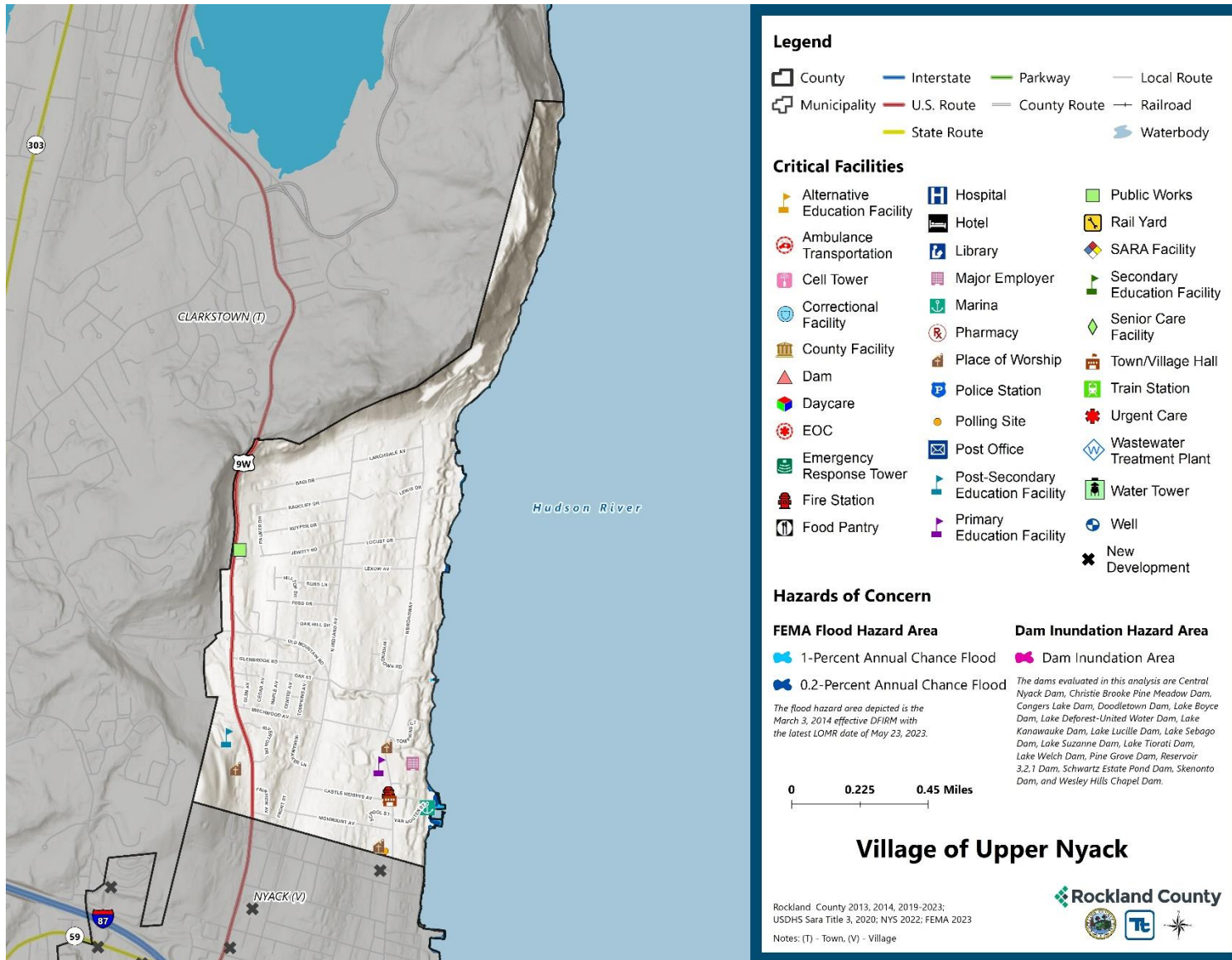
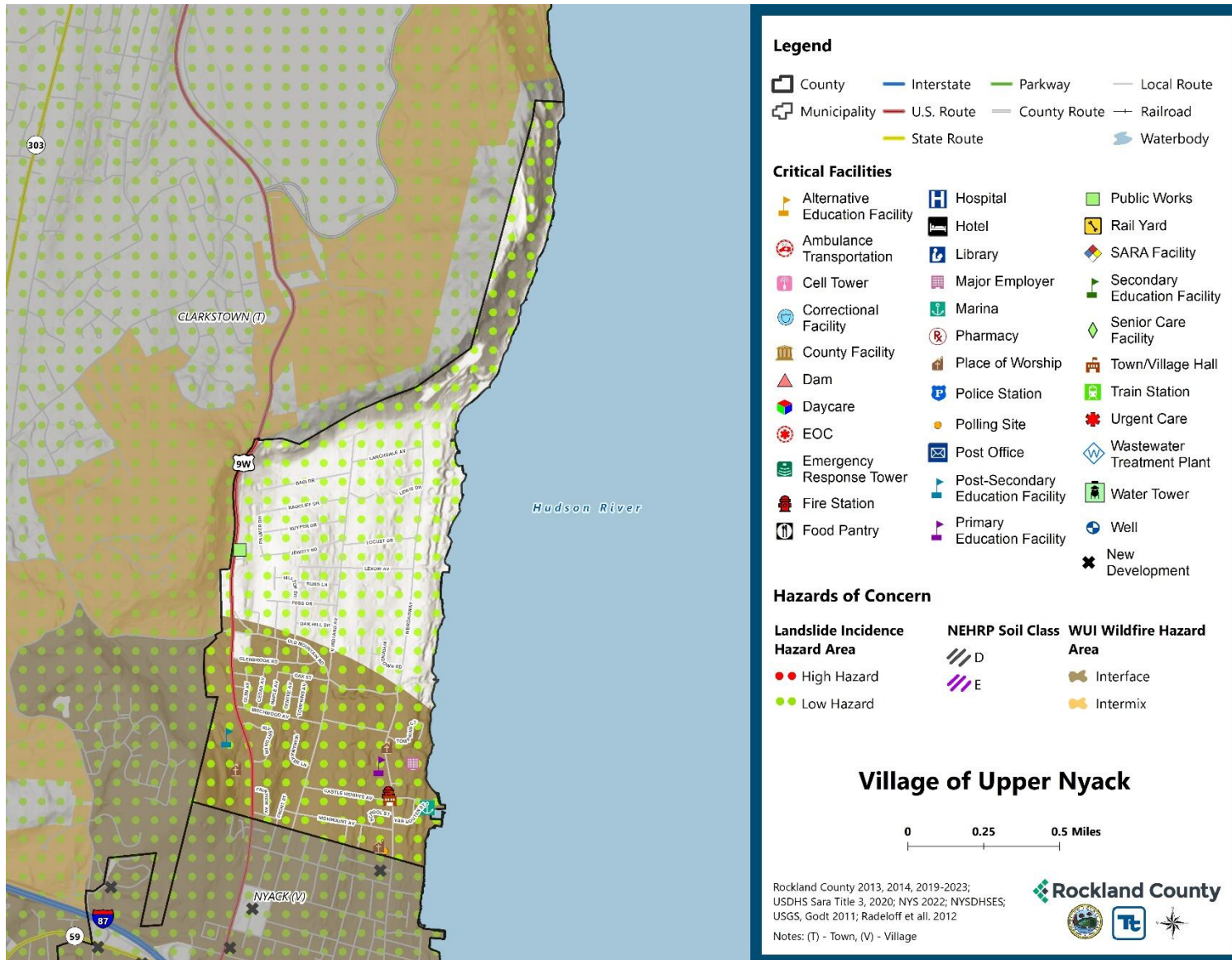


Figure 9.22-2. Village of Upper Nyack Landslide, Earthquake, and Wildfire Hazard Area Extent and Location



Hazard Event History

The history of natural and non-natural hazard events in the Village of Upper Nyack is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 9.22-14 provides details on loss and damage in the Village during hazard events since the last hazard mitigation plan update.

Table 9.22-14. Hazard Event History in the Village of Upper Nyack

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Summary of Damage and Losses in the Village
Jan 20, 2020 - May 11, 2023	New York Covid-19 (3434-EM-NY, 4480-DR-NY)	Yes	The Covid-19 pandemic resulted in nationwide shutdowns, social distancing and masking requirements, and immunization efforts. Since the start of the pandemic, roughly 950 deaths have been reported in Rockland County. The federal Public Health Emergency expired in May 2023, but illness continues to occur as the virus shifts to becoming endemic.	Productivity losses due to mandated staff reductions. Office renovations to maintain mandatory distancing and installation of plastic shields. Purchase and installation of air filtration.
September 1-3, 2021	New York Remnants of Hurricane Ida (3572-EM-NY, 4615-DR-NY)	Yes	Extremely heavy rainfall associated with the remnants of Hurricane Ida overspread southeast New York during the evening of September 1 and continued through the early morning hours of September 2. Rainfall totals ranged from 5-8 inches across much of the region, with much of that rain falling in just a few hours. This resulted in widespread catastrophic flash flooding.	Approx. 150 linear feet of pipe damaged due to excessive storm flow.

EM = Emergency Declaration (FEMA)
 FEMA = Federal Emergency Management Agency
 DR = Major Disaster Declaration (FEMA)
 N/A = Not applicable

Hazard Ranking and Vulnerabilities

The hazard profiles in Volume I have detailed information regarding each planning partner’s vulnerability to the identified hazards. The following summarizes presents key risk assessment results for the Village of Upper Nyack.

Hazard Ranking

The participating jurisdictions have differing degrees of vulnerability to the hazards of concern, so each jurisdiction ranked its own degree of risk to each hazard. The community-specific hazard ranking is based on problems and impacts identified by the risk assessment presented in Volume I. The ranking process involves an assessment of the likelihood of occurrence for each hazard; the potential impacts of the hazard on people, property, and the economy; community capabilities to address the hazard; and changing future climate conditions. Upper Nyack

reviewed the County hazard ranking and individual results to assess the relative risk of the hazards of concern to the community. During the review of the hazard ranking, the Village indicated the following:

- During the review of the hazard/vulnerability risk ranking, the Village indicated the rankings were accurate.

Table 9.22-15 shows Upper Nyack’s final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 9.22-15. Hazard Ranking

Hazard	Rank
Dam Failure	Low
Disease Outbreak	Medium
Drought	Medium
Earthquake	Low
Extreme Temperature	Medium
Flood	Medium
Landslide	Low
Severe Weather	High
Severe Winter Weather	High
Wildfire	Medium

Note: The scale is based on the hazard rankings established in Volume I, modified as appropriate based on review by the jurisdiction

Critical Facilities

Table 9.22-16 identifies critical facilities in the community located in the 1 percent and 0.2 percent annual chance floodplains.

Table 9.22-16. Potential Flood Losses to Critical Facilities

Name	Type	Exposure		Addressed by Proposed Action	Already Protected to 0.2 percent Flood Level (describe protections)
		1 percent Event	0.2 percent Event		
The Village of Upper Nyack has no critical facilities located within the 1- or 0.2-percent Annual Chance Flood Hazard Area.					

Source: Rockland County 2023, FEMA

Identified Issues

After review of the Village of Upper Nyack’s hazard event history, hazard rankings, hazard location, and current capabilities, the Village of Upper Nyack identified the following vulnerabilities within their community:

- The Village does not have any organizations that conduct outreach to socially vulnerable populations and underserved populations.
- There is one SRL property in the Village. Repetitively flooded properties place an undue stress on the property owner and Village and efforts should be made to mitigate them.
- The Village does not have a formalized list of damaged properties or property owners which may be interested in flood mitigation measures, such as elevation or acquisition.

- There are flood prone roadways in the Village, including at the intersection of Midland Ave and Old Mountain Road.
- Residential properties experience flooding due to drainage issues on Lexow Avenue, between Broadway and the Hudson River.
- The Village currently does not have a comprehensive education and outreach program. There is a need to educate residents and businesses about hazard mitigation, preparation, response, and recovery utilizing a variety of outreach methods.
- If facilities were built before a certain date, they could be more susceptible to damage from a hazard event.
- The current emergency response plans do not implement monitoring or warning systems.
- Floodplain management and ordinance enforcement staff are not Certified Floodplain Managers.
- The Village is not in the CRS program.
- The Village does not have the capability in-house to implement GIS mapping for the Village. Lack of public knowledge on the spatial extent of hazards.
- The Village does not currently maintain a risk area database. Development in hazard areas can lead to avoidable casualties and property damage.
- The municipality does not have a Substantial Damage Management Ordinance, nor do they have a standard process in place when conducting substantial damage determinations. The Village has substantial damage determination provisions in both the adopted NFIP ordinance and adopted building code, but staff are unaware of these provisions and do not leverage them.

9.22.7 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and prioritizes actions to address over the next five years.

Past Mitigation Initiative Status

Additional Mitigation Efforts

In addition to the mitigation initiatives completed in [Error! Not a valid bookmark self-reference.](#), Village of Upper Nyack did not identify any mitigation efforts completed since the last HMP.

Table 9.22-17 indicates progress on the Village’s mitigation strategy identified in the 2019 HMP. Actions that are still recommended but not completed or that are in progress are carried forward and combined with new actions as part of the mitigation strategy for this plan update. Previous actions that are now ongoing programs and capabilities are indicated as such and are presented in the capability assessment earlier in this annex.

Additional Mitigation Efforts

In addition to the mitigation initiatives completed in [Error! Not a valid bookmark self-reference.](#), Village of Upper Nyack did not identify any mitigation efforts completed since the last HMP.

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Table 9.22-17. Status of Previous Mitigation Actions

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
UN-1	Midland Ave and Old Mountain Road Culvert Upgrades	Flooding	Village Board, Village Engr.	Flooding at the intersection of Midland Ave and Old Mountain Road. Upgrade of the culvert at the intersection of Midland Ave and Old Mountain Rd to increase the stormwater capacity and help to mitigate local flooding.	1. No Progress 2. The Village was not able to make progress on this action due to other priorities and funding limitations.	1. Include 2. Keep as is 3. N/A
UN-2	Lexow Avenue Drainage Improvements	Flooding	Village Board, Village Engr.	Flooding of residential properties between Broadway and the Hudson River. Upgrade the storm drain complex on Lexow Ave and its outfall on Broadway to allow for increase stormwater capacity and mitigate local flooding.	1. No Progress 2. The Village was not able to make progress on this action due to other priorities and funding limitations.	1. Include 2. Keep as is 3. N/A
UN-3	Comprehensive Plan Updates	Flooding, Wind Damage	Village Planning Board, County Planning	The current comprehensive plan does not incorporate natural disaster mitigation techniques. Ensure that local comprehensive plans incorporate natural disaster mitigation techniques through a courtesy review or draft plans by the County Planning Department.	1. Complete 2. The Village incorporated hazard mitigation principles into the 2021 comprehensive plan update.	1. Discontinue 2. N/A 3. The Village incorporated hazard mitigation principles into the 2021 comprehensive plan update.

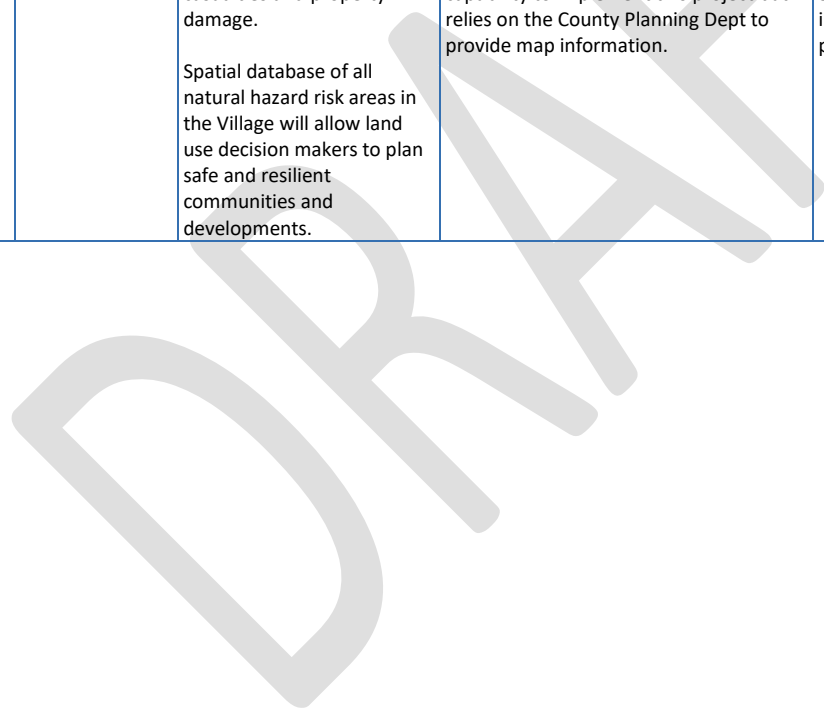
Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
UN-4	GIS Online Mapping	All Hazards	County GIS	Lack of public knowledge on the spatial extent of hazards. Provide GIS hazard information online for residents and others in the community to view the Village's hazard vulnerabilities.	1. No Progress 2. The Village does not have in-house GIS capability to implement this project but relies on the County Planning Dept to provide map information.	1. Discontinue 2. N/A 3. The Village does not have in-house GIS capability to implement this project but relies on the County Planning Dept to provide map information.
UN-5	Public Workshops	All Hazards	TBD	The public may not be aware of the Village's hazard vulnerabilities and planning/zoning decisions. Hold periodic workshops regarding zoning and planning issues that arise regarding natural hazards and hazard mitigation.	1. Discontinued 2. Planning and zoning requirements are listed on applications.	1. Discontinue 2. N/A 3. Planning and zoning requirements are listed on applications.

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
UN-6	Maintain List of Repetitive Flood Properties	Flooding	Village Board, Village Engr., RC GIS	<p>Repetitively flooded properties place an undue stress on the property owner and village and efforts should be made to mitigate them.</p> <p>Identify and document repetitively flooded properties. Work with owners to explore mitigation opportunities for repetitively flooded properties, and if appropriate and feasible, carry out acquisition, relocation, elevation and floodproofing measures to protect these properties.</p>	<p>1. No Progress</p> <p>2. The Village will maintain a list of properties when advised of flood damage; not all Owners report damage to the Village.</p>	<p>1. Include</p> <p>2. Keep as is</p> <p>3. N/A</p>
UN-7	Flood Prone Road Mitigation Measures	Flooding	Village Board, DPW, Village Engr.	<p>Flood prone roads can inhibit emergency response and evacuation during a flood.</p> <p>Develop specific mitigation solutions for flood prone road systems (roads, bridges, intersections, drainage, etc.) under the leadership of County DPW.</p>	<p>1. No Progress</p> <p>2. The Village was not able to make progress on this action due to other priorities and funding limitations.</p>	<p>1. Include</p> <p>2. Keep as is</p> <p>3. N/A</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
UN-8	Critical Facilities Protection	All Hazards	Bldg. Insp.	<p>If facilities were built before a certain date, they could be more susceptible to damage from a hazard event.</p> <p>Determine the year built and level of protection for critical emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide some degree of protection from natural hazards and pursue potential mitigation opportunities to protect these sites as funding becomes available.</p>	<p>1. No Progress 2. The Village was not able to make progress on this action due to other priorities.</p>	<p>1. Include 2. Keep as is 3. N/A</p>
UN-9	Update Emergency Response Plans	All Hazards	Village Emergency Manager, RCOFES	<p>The current emergency response plans do not implement monitoring or warning systems.</p> <p>Review existing emergency response plans for enhancement opportunities: work with social support agencies, homeowners' associations and general public to develop and implement monitoring and warning systems focused on vulnerable populations and provision of adequate shelter facilities.</p>	<p>1. No Progress 2. The Village was not able to make progress on this action due to other priorities.</p>	<p>1. Include 2. Keep as is 3. N/A</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
UN-10	Review Village Codes	All Hazards	Village Board, Planning Board	<p>New vulnerabilities could have emerged, or existing vulnerabilities could have worsened, which could warrant a code update.</p> <p>The Village would like to review and potentially update their existing local codes/ordinances against the identified hazards to determine whether there needs to be any amendments to address identified hazards and, where a need is identified; modify/amend the codes/ordinances as applicable.</p>	<p>1. Ongoing Capability 2. Codes and ordinances are reviewed continuously to identify room for amendments.</p>	<p>1. Discontinue 2. N/A 3. Ongoing capability. Codes and ordinances are reviewed continuously to identify room for amendments.</p>
UN-11	Flood Damage Prevention Ordinance Update, FIRMs	Flooding	Village Board, FPA	<p>Future FIRMS could show the need for a more stringent flood ordinance if risk has increased.</p> <p>Update/review floodplain management ordinances to be consistent with potential future new FIRMs.</p>	<p>1. Ongoing Capability 2. Codes and ordinances are reviewed continuously to identify room for amendments.</p>	<p>1. Discontinue 2. N/A 3. Ongoing capability. Codes and ordinances are reviewed continuously to identify room for amendments.</p>
UN-12	Certified Floodplain Managers	Flooding	Village Board, FPA	<p>Floodplain management and ordinance enforcement staff are not Certified Floodplain Managers.</p> <p>Encourage staff involved in floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs).</p>	<p>1. No Progress 2. The Village was not able to make progress on this action due to other priorities.</p>	<p>1. Include 2. Keep as is 3. N/A</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
UN-13	Community Rating System	Flooding	Village Board, FPA	The Village is not in the CRS program. Join the Community Rating System (CRS).	1. No Progress 2. The Village was not able to make progress on this action due to other priorities.	1. Include 2. Keep as is 3. N/A
UN-14	Hazard Risk Areas Database	All Hazards	Village Board, Planning Board	Development in hazard areas can lead to avoidable casualties and property damage. Spatial database of all natural hazard risk areas in the Village will allow land use decision makers to plan safe and resilient communities and developments.	1. No Progress 2. The Village does not have in-house GIS capability to implement this project but relies on the County Planning Dept to provide map information.	1. Discontinue 2. N/A 3. The Village does not have in-house GIS capability to implement this project but relies on the County Planning Dept to provide map information.



Proposed Hazard Mitigation Initiatives for the HMP Update

Upper Nyack participated in the mitigation strategy workshop for this HMP to identify appropriate actions to include in a local hazard mitigation strategy. Its comprehensive consideration of all possible activities to address hazards of concern included review of the following FEMA documents:

- FEMA 551 “Selecting Appropriate Mitigation Measures for Floodprone Structures” (March 2007)
- FEMA “Mitigation Ideas—A Resource for Reducing Risk to Natural Hazards” (January 2013).

The action worksheets included at the end of this annex list the mitigation actions that Upper Nyack would like to pursue in the future to reduce the effects of hazards. The actions are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in the Village’s priorities.

Table 9.22-18 indicates the range of proposed mitigation action categories. The four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table to further demonstrate the wide range of activities and mitigation measures selected.

Volume I identifies 14 evaluation criteria for prioritizing the mitigation actions. To assist with rating each mitigation action as high, medium, or low priority, a numeric rank is assigned (-1, 0, or 1) for each of the evaluation criteria. Table 9.22-19 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Table 9.22-18. Analysis of Mitigation Actions by Hazard and Category

Hazard	Actions That Address the Hazard, by Action Category									
	FEMA				CRS					
	LPR	SIP	NSP	EAP	PR	PP	PI	NR	SP	ES
Dam Failure	5	-	-	3	5	2	3	-	-	1
Disease Outbreak	1	-	-	2	1	2	2	-	-	-
Drought	5	-	-	3	5	2	3	-	-	1
Earthquake	5	-	-	3	5	2	3	-	-	1
Extreme Temperature	3	-	-	2	3	2	2	-	-	1
Flood	7	2	-	3	7	5	5	-	2	1
Landslide	5	-	-	3	5	2	3	-	-	1
Severe Weather	4	1	-	2	4	4	2	-	1	1
Severe Winter Weather	3	-	-	2	3	2	2	-	-	1
Wildfire	5	-	-	3	5	2	3	-	-	1

Local Plans and Regulations (LPR)—These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.

Structure and Infrastructure Project (SIP)—These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct structures to reduce the impact of hazards.

Natural Systems Protection (NSP)—These are actions that minimize damage and losses and preserve or restore the functions of natural systems.

Education and Awareness Programs (EAP)—These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities

Preventative Measures (PR)—Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.

Property Protection (PP)—These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.

Public Information (PI)—Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.

Natural Resource Protection (NR)—Actions that minimize hazard loss and preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.

Structural Flood Control Projects (SP)—Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.

Emergency Services (ES)—Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities.

Table 9.22-19. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Critical Lifelines	Other Community Objectives	Total	High / Medium / Low
2024-UpperNyackV-01	Socially Vulnerable Populations Outreach	1	0	1	1	1	1	0	1	1	1	1	1	1	1	12	High
2024-UpperNyackV-02	Repetitive and Severe Repetitive Loss Properties	1	1	1	1	1	0	1	1	1	1	1	1	0	1	12	High
2024-UpperNyackV-03	Flood Mitigation Interest	1	1	1	1	1	1	1	1	1	0	1	1	1	1	13	High
2024-UpperNyackV-04	Flood Prone Road Mitigation Measures	0	1	1	1	1	0	1	0	1	0	1	1	0	1	9	Medium
2024-UpperNyackV-05	Lexow Avenue Drainage Improvements	1	1	1	1	1	0	1	1	1	1	1	1	1	1	13	High
2024-UpperNyackV-06	Public Education and Outreach	1	1	1	1	1	1	0	1	1	1	1	1	0	1	12	High
2024-UpperNyackV-07	Critical Facilities Protection	0	1	1	1	1	1	0	0	1	1	1	1	1	0	10	Medium
2024-UpperNyackV-08	Emergency Response Plan Update	1	1	1	1	1	1	0	1	1	1	0	1	0	1	11	High
2024-UpperNyackV-09	Staff Credentialling	1	1	1	1	1	1	0	1	1	1	1	1	0	1	12	High
2024-UpperNyackV-10	Community Rating System (CRS) Program	0	1	1	1	1	1	0	1	1	0	1	1	0	1	10	Medium
2024-UpperNyackV-11	GIS Online Mapping	1	1	1	1	1	1	0	1	0	1	1	1	0	0	10	Medium
2024-UpperNyackV-12	Hazard Risk Areas Database	1	1	1	1	1	1	0	0	0	1	1	1	1	0	10	Medium
2024-UpperNyackV-13	Substantial Damage Determination Training and Resources	1	1	1	0	1	1	0	0	1	1	1	1	1	1	11	High

Note: Volume I, Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14).

Action 2024-UpperNyackV-01. Socially Vulnerable Populations Outreach

Action Name:	2024-UpperNyackV-01. Socially Vulnerable Populations Outreach	
Description of the Problem:	The Village does not have any organizations that conduct outreach to socially vulnerable populations and underserved populations. During hazard events, the public may need to quickly access information about evacuation routes and shelters, or other steps they can take to protect themselves and their property. Residents may also need information about what services are available or offline due to flooding from intense precipitation, dam failure, severe storms, and snow melt; where to receive a vaccination or other healthcare in the event of a disease outbreak; public cooling or heat centers, such as libraries, during extreme temperatures; and evacuation areas for earthquakes, landslides, and wildfires. Socially vulnerable and underserved populations may rely on these types of services more heavily than other segments on the population. Furthermore, they may be less able to access these resources due to a variety of potential obstacles, such as mobility issues or language barriers.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	Create outreach materials, or utilize those from Rockland County, on hazard risks for socially vulnerable populations. Methods of distribution may include Village events, the Village newsletters, social media, the Village website, and having the materials on display for the public at Village libraries and offices.	
Lead Agency:	Village Administration	
Supporting Agencies:	Rockland County	
Estimated Cost:	Low	
Potential Funding Sources:	Village Budget, HMGP	
Implementation Timeline:	Within 3 years	
Goals Met:	1, 3, 5	
Benefits:	This action will ensure there is an individual working to identify and work with the socially vulnerable populations in the Village. Furthermore, this action will create opportunities to educate and inform populations on hazard risks.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Socially vulnerable populations in the Village will become educated on hazards risks. The Village will identify an individual to identify and work with these populations to ensure the most up to date information is being shared.	
Impact on Critical Facilities/Lifelines:	Educating populations on hazard risk and how to mitigate the risks can decrease the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.	
Impact on Capabilities	This action would build upon the Village’s already existing public education and outreach program.	
Impact on Future Development:	Not applicable	

Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related disaster events. This action will inform residents and business owners of how to reduce risk from hazards and how climate change may exacerbate those risks.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current methods remain the only ones used
	Rely on state or federal resources		Resources may be generalized and not specific to the risks in the Village
	Use only a few methods for distribution		Using only a few methods of distribution may hinder socially vulnerable populations from receiving the guidance

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Action 2024-UpperNyackV-02. Repetitive and Severe Repetitive Loss Properties

Action Name:	2024-UpperNyackV-02. Repetitive and Severe Repetitive Loss Properties		
Description of the Problem:	There is one SRL property in the Village. These properties exhibit elevated vulnerability and may face increasing risks to flood damage due to changes in precipitation intensity and frequency, raising the possibility for these properties to become Repetitive/Severe Repetitive Loss Properties. These properties may require a disproportionate amount of municipal resources after hazard events if they are damaged.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The Village will promote and support non-structural flood hazard mitigation alternatives for at risk properties within the floodplain, including those that have been identified as Repetitive Loss (RL) and Severe Repetitive Loss (SRL), such as acquisition/relocation or elevation depending on feasibility. The parameters for this initiative would be funding, benefits versus cost, and willing participation of property owners.		
Lead Agency:	Floodplain Administrator		
Supporting Agencies:	Rockland County		
Estimated Cost:	Medium		
Potential Funding Sources:	FEMA FMA, FMA SWIFT, Village Budget, County Budget, Property Owners		
Implementation Timeline:	3 years		
Goals Met:	1, 2, 3		
Benefits:	This action would foster comprehensive floodplain management by removing at risk properties from the flood hazard area or elevating properties to reduce the flood risk.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	Socially vulnerable populations may be able to have houses elevated or acquired when it would otherwise be unaffordable.		
Impact on Critical Facilities/Lifelines:	Removing structures from the floodplain decreases the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.		
Impact on Capabilities	This action will enhance the Village’s current NFIP capabilities.		
Impact on Future Development:	Increased outreach to homeowners within a flood prone area will limit construction in areas that are prone to hazard events. Homes may be acquired, which will remove those structures from the floodplain and prevent future development on those sites.		
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low

Alternatives	Action	Evaluation
	No action	Current problem continues
	Construct flood walls/barriers around vulnerable areas	Costly and can divert floodwaters to other areas
	Deployable flood barriers for vulnerable areas	Requires a great deal of work to implement prior to each event

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Action 2024-UpperNyackV-03. Flood Mitigation Interest

Action Name:	2024-UpperNyackV-03. Flood Mitigation Interest	
Description of the Problem:	The Village does not have a formalized list of damaged properties or property owners which may be interested in flood mitigation measures, such as elevation or acquisition. Without this information, the Village does not have a streamlined way to assess overall trends in damages/impacts to these properties to determine properties of the highest risk of flood damage. It also does not track communications with property owners or the implementation or interest in potential mitigation efforts.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Floodplain Administration will develop a list for inventorying system or properties damaged by flood events and property owners who are interested in flood mitigation measures, such as elevation or acquisition.	
Lead Agency:	Floodplain Administrator	
Supporting Agencies:	Planning Board, Zoning Board, Village Administration	
Estimated Cost:	Staff time, Low	
Potential Funding Sources:	Village Budget	
Implementation Timeline:	Within 2 years	
Goals Met:	1, 2, 3, 5	
Benefits:	Keeping a list of damaged properties and property owners interested in flood mitigation efforts may lead to the elimination of flood damage to homes and residences, which creating an open space for the municipality and increasing flood storage.	
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Collecting data regarding homeowners that reside within flood prone areas provides an opportunity to introduce location-specific opportunities for assistance. Removing homes from the floodplain immediately removes the risk to life and property.	
Impact on Critical Facilities/Lifelines:	Removing structures from the floodplain decreases the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.	
Impact on Capabilities	This action will create a new Village capability, while enhancing its current NFIP capabilities.	
Impact on Future Development:	Increased outreach to homeowners within a flood prone area will limit construction in areas that are prone to hazard events. Homes may be acquired, which will remove those structures from the floodplain and prevent future development on those sites.	

Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events. Areas experiencing flooding conditions may increase. Removing structures from the floodplain will reduce the response and recovery costs as a result of these events and decrease the loss of human life as a result of these events. Elevating structures will reduce the recovery costs as a result of these events.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action	Evaluation	
	No action	Current problem remains	
	Only share opportunities when notified of grant funding	May not be enough time to garner interest or write application	
	Wait for information from the State on flood-damaged properties	May be a delay in notice	

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Action 2024-UpperNyackV-04. Flood Prone Road Mitigation Measures

Action Name:	2024-UpperNyackV-04. Flood Prone Road Mitigation Measures	
Description of the Problem:	There are flood prone roadways in the Village, including at the intersection of Midland Ave and Old Mountain Road. These roadways may experience damage or become impassable due to flooding and severe storm events.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Village will identify which roadways are being impacted and develop specific mitigation solutions for flood prone road systems (roads, bridges, intersections, drainage, etc.) under the leadership of County DPW. Upgrade of the culvert at the intersection of Midland Ave and Old Mountain Rd to increase the stormwater capacity and help to mitigate local flooding.	
Lead Agency:	Village Public Works	
Supporting Agencies:	County Public Works	
Estimated Cost:	Medium	
Potential Funding Sources:	FEMA BRIC, HMGP, Village Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	2	
Benefits:	This action will identify measures to protect infrastructure in the transportation lifeline, which will lead to the assurance of clear roadways for evacuations, regular travel, and emergency responses.	
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	This action will assist socially vulnerable populations whose properties are impacted by flooding at the intersection of Midland Ave and Old Mountain Road.	
Impact on Critical Facilities/Lifelines:	This action will identify measures to protect infrastructure in the transportation lifeline, which will lead to the assurance of clear roadways for evacuations, regular travel, and emergency responses.	
Impact on Capabilities	Not applicable	
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.	
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events.	
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium
		<input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No action	Current problem continues

	Relocate all flood prone road systems	Not feasible
	Raise all flood prone roads	Cost prohibitive

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Action 2024-UpperNyackV-05. Lexow Avenue Drainage Improvements

Action Name:	2024-UpperNyackV-05. Lexow Avenue Drainage Improvements		
Description of the Problem:	Residential properties experience flooding due to drainage issues on Lexow Avenue, between Broadway and the Hudson River. This flooding can cause property and infrastructure damage, as well as affect road access.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	Upgrade the storm drain complex on Lexow Ave and its outfall on Broadway to allow for increase stormwater capacity and mitigate local flooding.		
Lead Agency:	Village Board		
Supporting Agencies:	Engineering		
Estimated Cost:	High		
Potential Funding Sources:	FEMA BRIC, HMGP, Village Budget		
Implementation Timeline:	Within 4 years		
Goals Met:	2, 5		
Benefits:	Overall flooding will be reduced, which will result in less frequency of road closures and reduced damage occurring to drainage infrastructure and roadways during severe events.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	This action will assist socially vulnerable populations whose properties are impacted by flooding the drainage infrastructure.		
Impact on Critical Facilities/Lifelines:	This action will identify measures to protect infrastructure in the transportation lifeline, which will lead to the assurance of clear roadways for evacuations, regular travel, and emergency responses.		
Impact on Capabilities	This action will upgrade the stormwater management capabilities of the Village.		
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.		
Climate Change Considerations:	Climate change is likely to result in more frequent and severe rainfall events. This action upsizes culvert sizes to meet changing stormwater needs as the result of climate change.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No Action		-
	Remove roadway		Roadway cannot be removed

	Install rain gardens	Rain gardens are unlikely to be able to absorb enough stormwater to prevent flooding during severe rainfall events.
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Action 2024-UpperNyackV-06. Public Education and Outreach

Action Name:	2024-UpperNyackV-06. Public Education and Outreach	
Description of the Problem:	The Village currently does not have a comprehensive education and outreach program. During hazard events, the public may need to quickly access information about evacuation routes and shelters, or other steps they can take to protect themselves and their property. Residents may also need information about what services are available or offline due to flooding from intense precipitation, dam failure, severe storms, and snow melt; where to receive a vaccination or other healthcare in the event of a disease outbreak; public cooling or heat centers, such as libraries, during extreme temperatures; and evacuation areas for earthquakes, landslides, and wildfires.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	Develop and enhance the public awareness program on hazards, prevention, and mitigation. Continue to work with Rockland County on their program that provides information to the municipalities.	
Lead Agency:	Village Administration	
Supporting Agencies:	Rockland County	
Estimated Cost:	Low	
Potential Funding Sources:	Village Budget	
Implementation Timeline:	2 years	
Goals Met:	1, 2, 3, 5	
Benefits:	This action will improve the current public education and outreach program in the Village by including discussions on disaster preparedness and hazard mitigation to residents and business owners, which will contribute to the resiliency of the Village.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Socially vulnerable populations will learn how to prepare for and mitigate the various hazards which may impact them in the Village.	
Impact on Critical Facilities/Lifelines:	Businesses, which may be considered critical facilities or lifelines, would be more informed on how to prepare for emergency events and mitigate the risks of potential hazards. With these businesses becoming more resilient, this action would contribute to their continuity of operations.	
Impact on Capabilities	This action would build upon the Village’s already existing public education and outreach program.	
Impact on Future Development:	Not applicable	
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related disaster events. This action will inform residents and business owners of how to reduce risk from hazards and how climate change may exacerbate those risks.	

Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current methods remain the only ones used
	Rely on state or federal resources		Resources may be generalized and not specific to the risks in the Village
	Use only a few methods for distribution		Using only a few methods of distribution may hinder socially vulnerable populations from receiving the guidance

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Action 2024-UpperNyackV-07. Critical Facilities Protection

Action Name:	2024-UpperNyackV-07. Critical Facilities Protection		
Description of the Problem:	If facilities were built before a certain date, they could be more susceptible to damage from a hazard event. These facilities may face elevated vulnerability to damage or service interruption during or following a flood caused by a dam failure, severe storm, or severe winter storm, drought, earthquake, extreme temperatures, landslides, and/or wildfires.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire	
Description of the Solution:	Determine the year built and level of protection for critical emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide some degree of protection from natural hazards and pursue potential mitigation opportunities to protect these sites as funding becomes available.		
Lead Agency:	Village Building Department		
Supporting Agencies:	Village Administration, Planning Board, Zoning Board		
Estimated Cost:	Staff time, Low		
Potential Funding Sources:	Village Budget		
Implementation Timeline:	Within 3 years		
Goals Met:	1, 2, 5, 7		
Benefits:	The Village will have codes and plans that integrate hazard mitigation principles and will be able to identify which facilities may not currently be in aligned with current codes.		
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	Not applicable		
Impact on Critical Facilities/Lifelines:	Critical facilities and lifelines will be expected to follow updated plans and codes.		
Impact on Capabilities	The Village’s capability to handle hazard events is greatly improved by integrating hazard mitigation into other plans and codes.		
Impact on Future Development:	Hazard mitigation principles will be integrated into future development via building and zoning codes.		
Climate Change Considerations:	Hazard events are increasing in frequency and severity due to climate change.		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem continues

	Rely on County Plans/Codes	Plans are not specific to the Village and the relevant mitigation issues that they have apart from the County
	Create additional hazard mitigation information	Integrating relevant plans/codes together makes them more useful than creating additional separate documents

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Action 2024-UpperNyackV-08. Emergency Response Plan Update

Action Name:	2024-UpperNyackV-08. Emergency Response Plan Update		
Description of the Problem:	The current emergency response plans do not implement monitoring or warning systems during any of the following events: dam failure, disease outbreak, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, and wildfire.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire	
Description of the Solution:	Review existing emergency response plans for enhancement opportunities: work with social support agencies, homeowners’ associations, and general public to develop and implement monitoring and warning systems focused on vulnerable populations and provision of adequate shelter facilities.		
Lead Agency:	Village Administration		
Supporting Agencies:	Rockland County		
Estimated Cost:	Low		
Potential Funding Sources:	Village Budget, EMPG		
Implementation Timeline:	Within 3 years		
Goals Met:	1, 3, 5		
Benefits:	The Village’s Emergency Response Plan will be updated to account for new hazard risks, the identification of vulnerable populations, the implementation of monitoring and warning systems, and the identification of available sheltering locations in the Village.		
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	The Emergency Response Plan covers a discussion of a variety of topics, including population distribution and locations, including any concentrated populations of individuals with disabilities, others with access and functional needs, or individuals with limited English proficiency.		
Impact on Critical Facilities/Lifelines:	The Emergency Response Plan covers a discussion of a variety of topics, including vulnerable critical facilities (e.g. nursing homes, schools, hospitals, infrastructure).		
Impact on Capabilities	This action will update an already existing planning capability of the Village.		
Impact on Future Development:	Future development will be protected by the Emergency Response Plan.		
Climate Change Considerations:	As impacts from climate change are increasingly felt, the contents in an Emergency Response Plan, including in the basic plan and any annexes, may need to be updated.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation

	No action	Current problem remains
	Integrate hazard mitigation principles in only hazard appendices	The plan will miss integration opportunities in the basic plan and annexes
	Ask County to integrate hazard mitigation into the County ERP	Village ERP still remains unintegrated

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Action 2024-UpperNyackV-09. Staff Credentialling

Action Name:	2024-UpperNyackV-09. Staff Credentialling		
Description of the Problem:	Floodplain management and ordinance enforcement staff are not Certified Floodplain Managers. Maintaining CFM certification requires continued education credits to ensure floodplain managers are informed and able to implement practices that reduce the risk of potential damage from flooding.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	Provide training and/or certification for Village staff with NFIP regulations and floodplain management ordinances. Encourage staff to become Certified Floodplain Managers via the Association of State Floodplain Manager’s CFM Certification Program.		
Lead Agency:	Floodplain Administrator		
Supporting Agencies:	Village Administration, Rockland County		
Estimated Cost:	Low		
Potential Funding Sources:	Village Budget		
Implementation Timeline:	Within 5 years		
Goals Met:	1, 3, 6		
Benefits:	This action will increase the NFIP capabilities of the Village and assure the Village’s NFIP program has enough staff to accomplish its goals and reach NFIP compliance.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	Officials that are up to date on flood risk are more likely to encourage development outside areas of high flood risk, which is where socially vulnerable populations have historically resided. Safer dwellings may be developed in a less vulnerable location.		
Impact on Critical Facilities/Lifelines:	The opportunity will exist for leaders and operators of utilities and other essential services to attend training and provide direction on ways the prepare for, plan for, and prevent interruptions in service as a result of a flood.		
Impact on Capabilities	This action will enhance the Village’s current NFIP capabilities.		
Impact on Future Development:	Officials that understand best practices in floodplain management will have the opportunity to influence future development and prevent unsafe building in flood hazard areas.		
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related disaster events. This action will educate staff on NFIP regulations to assist with the flood hazard.		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation

	No Action	-
	Hire outside contractors for floodplain administration	Costly
	Establish shared service agreements for floodplain administration from neighboring municipalities	Neighboring municipalities are unlikely to have the staff capacity to take on this role

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Action 2024-UpperNyackV-10. Community Rating System (CRS) Program

Action Name:	2024-UpperNyackV-10. Community Rating System (CRS) Program		
Description of the Problem:	The Village is not in the CRS program. The CRS Program would incentivize the Village to implement activities and initiatives that reduce its risk to flood damage, while making residents eligible for flood insurance discounts.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The Village will evaluate the benefits and costs of participating in CRS program. If feasible, the Village will join the program and begin implementing standards that exceed NFIP requirements.		
Lead Agency:	Floodplain Administrator		
Supporting Agencies:	Village Board, Planning		
Estimated Cost:	Low		
Potential Funding Sources:	Village Budget		
Implementation Timeline:	4 years		
Goals Met:	2, 3, 5		
Benefits:	The participation in the CRS benefits communities by offering discounted rates for flood insurance premiums, which addresses the three goals of the program: reduce and avoid flood damage to insurable property, strengthen and support the insurance aspects of the National Flood Insurance Program, and foster comprehensive floodplain management.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	The participation in the Community Rating System (CRS) benefits communities by offering discounted rates for flood insurance premiums, which may be more affordable for some socially vulnerable populations.		
Impact on Critical Facilities/Lifelines:	Not applicable		
Impact on Capabilities	This action would enhance the Village’s floodplain management capabilities.		
Impact on Future Development:	Future development would need to adhere to any increased standards established as part of joining the CRS program such as increased freeboard and elevation certificate requirements.		
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events. These changes are likely to increase flood risks.		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation

	No action	-
	Adopt aspects of the CRS program into the floodplain management program	Increased floodplain management capabilities but no reduction in flood insurance premiums
	Abandon any floodplain management practices not required by NFIP	Reduction in floodplain management capabilities and increase in risk.

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Action 2024-UpperNyackV-11. GIS Online Mapping

Action Name:	2024-UpperNyackV-11. GIS Online Mapping	
Description of the Problem:	The Village does not have the capability in-house to implement GIS mapping for the Village, which contributes to the lack of public knowledge on the spatial extent of hazards. This information could be used to inform residents on areas and assets that could be damaged during dam failures, droughts, earthquakes, floods, landslides, and wildfires.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	Work with the County {Planning Dept, GIS Division) to provide GIS hazard information online for residents and others in the community to view the Village's hazard vulnerabilities.	
Lead Agency:	Village Administration	
Supporting Agencies:	County Planning Dept.	
Estimated Cost:	Staff time, Low	
Potential Funding Sources:	Village Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 3, 5	
Benefits:	This action will provide visual GIS mapping of hazard areas.	
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Socially vulnerable populations in the Village will become educated on hazards risks.	
Impact on Critical Facilities/Lifelines:	Educating populations on hazard risk and how to mitigate the risks can decrease the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.	
Impact on Capabilities	This action will create a new capability for the Village and enhance public awareness.	
Impact on Future Development:	Not applicable	
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related disaster events. This action will inform the community of Village areas which may be the most at risk to various hazards.	
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium
		<input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No action	Current problem remains

	Map only flood hazard areas	Will align with NFIP requirements, but will not consider other hazard areas in the Village
	Create the system but do not make it public	Information will benefit Village and County employees, but not inform the public of potential hazards

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Action 2024-UpperNyackV-12. Hazard Risk Areas Database

Action Name:	2024-UpperNyackV-12. Hazard Risk Areas Database	
Description of the Problem:	The Village does not currently maintain a risk area database. Development in hazard areas can lead to avoidable casualties and property damage.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	Work with the County (Planning Dept, GIS Division) to initiate the creation of a spatial database of all natural hazard risk areas in the Village will allow land use decision makers to plan safe and resilient communities and developments.	
Lead Agency:	Building Department	
Supporting Agencies:	Floodplain Administrator, Planning and Zoning Boards	
Estimated Cost:	Staff time, Low	
Potential Funding Sources:	Village Budget	
Implementation Timeline:	Within 4 years	
Goals Met:	2, 4, 5	
Benefits:	This action will allow all permits issued within the Village to be tracked by hazard area.	
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Not applicable	
Impact on Critical Facilities/Lifelines:	Permits issued for critical facilities in the floodplain or other hazard areas will be tracked.	
Impact on Capabilities	This action will create a new capability for the Village and enhance its NFIP compliance.	
Impact on Future Development:	This action may lead to permits being restricted within various identified hazard areas in the Village and municipal codes to be updated.	
Climate Change Considerations:	Climate change may result in an increase in the frequency and severity of weather-related disaster events. This action will increase the Village’s ability to track structures located in hazard areas which may have conditions exacerbated by the impacts of climate change, such as floods and wildfires.	
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium
Alternatives	Action	Evaluation
	No action	Current problem remains
	Track only flood development permits	Will align with NFIP requirements, but will not consider other hazard areas in the Village

Action 2024-UpperNyackV-13. Substantial Damage Determination Training and Resources

Action Name:	Action 2024-UpperNyackV-13. Substantial Damage Determination Training and Resources	
Description of the Problem:	The municipality does not have a Substantial Damage Management Ordinance, nor do they have a standard process in place when conducting substantial damage determinations. The Village has substantial damage determination provisions in both the adopted NFIP ordinance and adopted building code, but staff are unaware of these provisions and do not leverage them. If multiple properties experience substantial damage during hazard events (such as a dam failure, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, and/or wildfire), the Village may be unable to prioritize staffing, budget, and resources in a cost- and time-effective manner that results in prolonged impacts and recovery.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	<p>The municipality will develop a Substantial Damage Management Plan, following the six-step planning process in 2021 Developing a Substantial Damage Management Plan (https://crsresources.org/files/500/developing_subst_damge_mgmt_plan.pdf). This plan will outline responsibilities for Substantial Damage determinations, determining market value, and permit approval processes following a disaster event.</p> <p>The municipality will also take part in workshops and training sessions offered by NYSDEC to train staff on the existing provisions in the NFIP ordinance and building code.</p>	
Lead Agency:	Floodplain Administrator	
Supporting Agencies:	Public Works, Building Department	
Estimated Cost:	Low	
Potential Funding Sources:	Municipal budget	
Implementation Timeline:	Within 5 years to develop the plan; ongoing to maintain and update the plan	
Goals Met:	2, 5, 7	
Benefits:	This plan will provide a process in making Substantial Damage Determinations and allow the municipality to make these determinations and meet NFIP requirements more quickly.	
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Substantially damaged structures are required to be rebuilt to be compliance with current codes. Socially vulnerable populations may not have the financial means to make these improvements. This action may allow for the identification of potential resources to address substantial damages to structures owned by socially vulnerable populations.	
Impact on Critical Facilities/Lifelines:	A Substantial Damage Management Plan would include all critical facilities and lifelines in the municipality.	

Impact on Capabilities:	This action improves disaster recovery capabilities.		
Impact on Future Development:	A Substantial Damage Management Plan would include all existing, current, and future development in the municipality.		
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related disaster events. This action provides additional planning for disaster recovery.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No Action		No change
	Rely on state or federal resources following disaster events		Resources may not be available during major widespread events
	Establish MOUs with outside agencies to conduct Substantial Damage Determinations		A plan outlining responsibilities is still necessary to prevent missing important requirements

DRAFT

SECTION 9. JURISDICTIONAL ANNEXES

9.23 VILLAGE OF WESLEY HILLS

This jurisdictional annex to the Rockland County Hazard Mitigation Plan (HMP) provides information to assist public and private sectors in the Village of Wesley Hills with reducing losses from future hazard events. This annex is not guidance of what to do when a disaster occurs; its focus is on actions that can be implemented prior to a disaster to reduce or eliminate damage to property and people. The annex presents a general overview of the Village of Wesley Hills, describes who participated in the planning process, assesses the Village’s risk, vulnerability, and capabilities, and outlines a strategy for achieving a more resilient community.

9.23.1 Hazard Mitigation Planning Team

The Village of Wesley Hills identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Village departments. The Village Clerk represented the community on the Rockland County HMP Planning Partnership and Steering Committee and supported the local planning process requirements by securing input from persons with specific knowledge to enhance the plan. All departments were asked to contribute to the annex development through reviewing and contributing to the capability assessment, reporting on the status of previously identified actions, and participating in action identification and prioritization.

Table 9.23-1 summarizes Village officials who participated in the development of the annex and in what capacity. Additional documentation of the Village’s planning activities through Planning Partnership meetings is included in Volume I.

Table 9.23-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Camille Guido-Downey, Village Clerk/Treasurer Address: 432 Route 306, Wesley Hills, NY 10952 Phone Number: (845) 354-0400 Email: villageclerk@wesleyhills.org	Name/Title: Marshall Katz, Mayor Address: 432 Route 306, Wesley Hills, NY 10952 Phone Number: (845) 354-0400 Email: mayor@wesleyhills.org
National Flood Insurance Program Floodplain Administrator	
Name/Title: John Layne, Building Inspector Address: 432 Route 306, Wesley Hills, NY 10952 Phone Number: (845) 354-0400 Email: buildinginspector@wesleyhills.org	
Additional Contributors	
Name/Title: Camille Guido-Downey, Village Clerk/Treasurer Method of Participation: Performed review of annex, attended meetings, completed hazard events history and NFIP surveys	
Name/Title: John Layne, Building Inspector Method of Participation: Performed review of annex, completed building permits worksheet	
Name/Title: Marshall Katz, Mayor Method of Participation: Performed review of annex	
Name/Title: Eve Mancuso, Engineer Method of Participation: Performed review of annex, attended meetings, identified mitigation strategies	

Primary Point of Contact	Alternate Point of Contact
Name/Title: Jonathan Lockman, Planner	
Method of Participation: Performed review of annex	

9.23.2 Municipal Profile

Incorporated in 1982, the Village of Wesley Hills is located in the central area of the Town of Ramapo in Rockland County (Rockland County 2018). It is bordered to the north, south and west by the Town of Ramapo and to the east by the Village of New Hempstead. There are several small waterbodies and one lake, Boker Lake, in the Village.

Research has shown that some populations are at greater risk from hazard events because of decreased resources or physical abilities. These populations can be more susceptible to hazard events based on a number of factors including their physical and financial ability to react or respond during a hazard, and the location and construction quality of their housing. Data from the 2017-2021 American Community Survey indicates that 10.3 percent of the population is 5 years of age or younger, 14.1 percent is 65 years of age or older, 0 percent is non-English speaking, 8.4 percent is below the poverty threshold, and 6.7 percent is considered disabled.

9.23.3 Jurisdictional Capability Assessment and Integration

The Village of Wesley Hills performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Volume I describes the components included in the capability assessment and their significance for hazard mitigation planning. The jurisdictional assessment for this annex includes analyses of the following:

- Planning and regulatory capabilities
- Development and permitting capabilities
- Administrative and technical capabilities
- Fiscal capabilities
- Education and outreach capabilities
- Classification under various community mitigation programs
- Adaptive capacity to withstand hazard events

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into day-to-day local government operations. As part of the hazard mitigation analysis, planning and /policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress toward plan integration. Development of an updated mitigation strategy provided an opportunity for the Village of Wesley Hills to identify opportunities for integration of mitigation concepts that can be incorporated into municipal procedures.

Planning, Legal, and Regulatory Capability and Integration

Table 9.23-2 summarizes the regulatory tools that are available to Village of Wesley Hills.

Table 9.23-2. Planning, Legal, and Regulatory Capability and Integration

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Codes, Ordinances, & Regulations				
Building Code	Yes	Chapter 230 Zoning, Article VIII Administration and Enforcement	State, Local	Building Inspector
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> This chapter and the Building Code shall be enforced and administered by the Building Inspector and one or more Assistant Building Inspectors as deemed necessary, referred to collectively as the "Building Inspector," as appointed by the Board of Trustees.				
Zoning/Land Use Code	Yes	Chapter 230 Zoning	Local	Building Inspector, Zoning Board of Appeals
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Under the authority granted by § 7-700 of the Village Law, as amended, the Board of Trustees of the Village of Wesley Hills hereby adopts this chapter to promote the purposes set forth in § 7-704 of the Village Law. In Chapter XII on Average Density, the code enables where appropriate, flexibility of design and development of land in such a manner as to preserve its natural and scenic qualities, protect areas of meaningful ecological value, reduce flood hazards, facilitate the adequate and economical provision of streets and utilities, minimize negative environmental impacts, improve the aesthetic quality of new residential developments, encourage the conservation of energy, increase recreational opportunities, and otherwise promote the planned and environmentally desirable use of land.				
Subdivision Code	Yes	Chapter 193 Subdivision of Land	Local	Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> It is declared to be the policy of the Village to consider land subdivisions as part of a plan for the orderly, efficient, and economical development of the Village. Land to be subdivided shall be of such character that it can be used safely for building or development purposes without danger to health or peril from fire, flood, or other menace, and without resulting in significant damage to the ecology of the area in which it is located. Land subject to fire, flood or other hazards shall not be subdivided nor developed for residential purposes, nor for such other uses as may increase danger to health, life, or property, or aggravate a flood hazard, but such land may be set aside for uses as shall not involve such danger nor produce unsatisfactory living conditions.				
Site Plan Code	Yes	Chapter 230 Zoning, Article X Site Plan Approval	Local	Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Approval of a site plan by the Planning Board is required for a) the development or redevelopment of any building, structure or lot or portion thereof for a new use; b) the expansion or relocation of any existing use; or c) any change of use of a building, structure or lot or portion thereof. The Planning Board sets forth appropriate conditions and safeguards which are in harmony with several identified purposes, including drainage. Per the ordinance, a proposed stormwater drainage system shall be adequate to prevent any increase in the rate of surface runoff or otherwise contribute to downstream flooding during a storm of any magnitude, up to and including a one-hundred-year frequency storm.				
Stormwater Management Code	Yes	Chapter 181 Stormwater Management	Local	Village
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The purpose of this article is to establish minimum stormwater management requirements and controls to protect and safeguard the general health, safety, and welfare of the public residing within this jurisdiction and to address the findings of fact in § 181-1 hereof. An identified objective of this ordinance is to minimize increases in the volumes and rates of stormwater runoff from land development activities in order to reduce flooding and streambank erosion.				
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Real Estate Disclosure	Yes	New York State (NYS) mandate, Property Condition Disclosure Act, NY Code – Article 14 §460-467	State, Local	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The NYS mandate requires sellers to disclose to potential buyers whether their property is located in a designated floodplain.				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Growth Management	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Environmental Protection Ordinance(s)	Yes	Chapter 221 Wetlands	Local	Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Wetlands Law of the Village of Wesley Hills enables the Village to preserve, protect and conserve its wetlands and requires any development in a wetland to submit an application before the Planning Board. The Planning Board will consider multiple criteria, including the effect of the proposed activity with reference to the public health and welfare, fishing, flood, hurricane and storm dangers and the protection or enhancement of the several functions of the wetlands and the benefits derived therefrom as set forth in this section, irrespective of political boundaries.				
Flood Damage Prevention Ordinance	Yes	Chapter 119 Flood Damage Prevention	Federal, State, Local	Building Inspector
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Flood Damage Prevention Ordinance shall promote the public health, safety, and general welfare and minimize public and private losses due to flood conditions in all areas of special flood hazard. The ordinance requires two feet of freeboard when base flood elevation data are available and three feet when it is not.				
Wellhead Protection	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Emergency Management Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Climate Change Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other: Freeboard	Yes	Chapter 119 Flood Damage Prevention	Local	Building Inspector
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> New York State requires new one- and two-family residences to be built with two feet of freeboard and all other construction types with one foot of freeboard. The Village’s Flood Damage Prevention Ordinance exceeds this requirement by requiring two feet of freeboard when flood elevation data are available and three feet when it is not.				
Other	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Planning Documents				
General/Comprehensive Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Capital Improvement Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Disaster Debris Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Floodplain Management or Watershed Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Stormwater Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Open Space Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Urban Water Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Habitat Conservation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Economic Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Community Wildfire Protection Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Community Forest Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Transportation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Agriculture Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Climate Action/ Resiliency/Sustainability Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Tourism Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Business/ Downtown Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Response/Recovery Planning				
Comprehensive Emergency Management Plan	Yes	Village of Wesley Hills Emergency Management Plan (2016)	Local	Village Clerk
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Emergency Management Plan aims to assess the Village’s ability to respond to emergency and identifies recommendations to improve its capacity to prepare and respond to future events.				
Continuity of Operations Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Substantial Damage Response Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Threat & Hazard Identification & Risk Assessment	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Post-Disaster Recovery Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Public Health Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

Development and Permitting Capability

Table 9.23-3 summarizes the capabilities of Village of Wesley Hills to oversee and track development.

Table 9.23-3. Development and Permitting Capability

Indicate if your jurisdiction implements the following	Yes/No	Comment:
Do you issue development permits? <ul style="list-style-type: none"> If you issue development permits, what department is responsible? If you do not issue development permits, what is your process for tracking new development? 	Yes	Building Department
Are permits tracked by hazard area? (For example, floodplain development permits.)	No	-
Do you have a buildable land inventory? <ul style="list-style-type: none"> If you have a buildable land inventory, please describe 	No	-
Describe the level of build-out in your jurisdiction.	N/A	The Village of Wesley Hills is fully built. Any new development would be part of a repurpose of existing developed lots.

Administrative and Technical Capability

Table 9.23-4 summarizes potential staff and personnel resources available to Village of Wesley Hills and their current responsibilities that contribute to hazard mitigation.

Table 9.23-4. Administrative and Technical Capabilities

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
<i>Administrative Capability</i>		
Planning Board	Yes	The Planning Board is responsible for all special permits for property use, such as business and professional offices, wireless communications services, tennis courts, satellite dishes, home occupations, neighborhood gathering, site plan, subdivision, wetlands, and clearing / filling / excavating.
Zoning Board of Adjustment	Yes	The Zoning Board of Appeals examines applications on a case-by-case basis for variances and appeals from the Building Inspector's decisions.
Planning Department	No	-
Mitigation Planning Committee	No	-
Environmental Board/Commission	No	-
Open Space Board/Committee	No	-
Economic Development Commission/Committee	No	-
Public Works/Highway Department	No	-
Construction/Building/Code Enforcement Department	Yes	The Building Department issues building permits and performs the inspections. The Fire Inspector is responsible for conducting fire and safety inspections of all commercial locations within the Village.
Emergency Management/Public Safety Department	No	-
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	Yes	Every 4 years outfalls are inspected, last completed in October 2016; 20percent of catch basins were also inspected above what the Town of Ramapo maintains on a yearly basis; if big storm is approaching, the Village sends email blasts to notify residents; weather notifications to residents.
Mutual aid agreements	Yes	Town of Ramapo covers police services (no formal agreement), and highway and maintenance service (agreement in place).
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	No	-
Other	No	-
<i>Technical/Staffing Capability</i>		
Planners or engineers with knowledge of land development and land management practices	Yes	Contract through Weston Engineering (Village Engineer) Contract planner consultant
Engineers or professionals trained in building or infrastructure construction practices	No	-
Planners or engineers with an understanding of natural hazards	Yes	All municipal employees
Staff with expertise or training in benefit/cost analysis	Yes	Mayor or Weston Engineering

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
Professionals trained in conducting damage assessments	Yes	Weston Engineering
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	Yes	Weston Engineering and Village have access to County GIS portal
Environmental scientist familiar with natural hazards	Yes	Contract through Weston Engineering or elsewhere as needed
Surveyor(s)	Yes	Weston Engineering
Emergency Manager	Yes	Mayor
Grant writer(s)	Yes	Contract consultant
Resilience Officer	No	-
Other (this could include stormwater engineer, environmental specialist, etc.)	No	-

Fiscal Capability

Table 9.23-5 summarizes financial resources available to Village of Wesley Hills.

Table 9.23-5. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use? (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	No
Capital improvements project funding	Yes
Authority to levy taxes for specific purposes	Yes
User fees for water, sewer, gas or electric service	No
Impact fees for homebuyers or developers of new development/homes	Yes
Stormwater utility fee	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	No
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	No
Other federal or state Funding Programs	Yes
Open Space Acquisition funding programs	No
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	No

Education and Outreach Capability

Table 9.23-6 summarizes the education and outreach resources available to Village of Wesley Hills.

Table 9.23-6. Education and Outreach Capabilities

Outreach Resources	Available? (Yes/No)	Comment:
Public information officer or communications office	No	-
Personnel skilled or trained in website development	Yes	Contracted
Hazard mitigation information available on your website	Yes	The Village maintains a website that provides links to the various municipal departments, local laws and planning documents, Village newsletter, news updates, and links to local, county, state, and federal governments.

Outreach Resources	Available? (Yes/No)	Comment:
Social media for hazard mitigation education and outreach	No	-
Citizen boards or commissions that address issues related to hazard mitigation	No	-
Warning systems for hazard events	Yes	The County utilizes NY-Alert and CodeRed (the backup to NY-Alert) for emergency notifications (all Towns and Villages have access to it). The Village utilizes its eblast system to send emails to its residents.
Natural disaster/safety programs in place for schools	No	-
Organizations that conduct outreach to socially vulnerable populations and underserved populations	No	-
Public outreach mechanisms / programs to inform citizens on natural hazards, risk, and ways to protect themselves during such events	Yes	See below
If yes, please describe.	-	Residents are informed through an email blast initiated by the Village (1,000 to 1,200 residents). The Village has distributed materials provided by the Cornell Cooperative Extension using the eblast. Village Hall also has smart televisions and has recently had a cable service upgrade to display presentations and messages.

Community Classifications

Table 9.23-7 summarizes classifications for community programs available to Village of Wesley Hills.

Table 9.23-7. Community Classifications

Program	Participating? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	No	-	-
New York State Department of Environmental Conservation (NYSDEC) Climate Smart Community	Yes	None	8/8/2018
National Weather Service Storm Ready Certification	No	-	-
Firewise Communities classification	No	-	-
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable

— = Unavailable

Adaptive Capacity

Adaptive capacity is defined as “the ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or respond to consequences” (IPCC 2022). Each jurisdiction has a unique combination of capabilities to adjust to, protect from, and withstand a future hazard event, future conditions, and changing risk. Table 9.23-8 summarizes the adaptive capacity for each identified hazard of concern and the Village’s capability to address related actions using the following classifications:

- Strong: Capacity exists and is in use.

- Moderate: Capacity might exist; but is not used or could use some improvement.
- Weak: Capacity does not exist or could use substantial improvement.

Table 9.23-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Disease Outbreak	Moderate
Drought	Moderate
Earthquake	Moderate
Extreme Temperature	Moderate
Flood	Moderate
Landslide	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

9.23.4 National Flood Insurance Program Compliance

This section provides specific information on the management and regulation of the regulatory floodplain, including current and future compliance with the National Flood Insurance Program (NFIP). The floodplain administrator listed in Table 9.23-1 is responsible for maintaining this information.

NFIP Summary

Table 9.23-9 summarizes the NFIP statistics for Village of Wesley Hills.

Table 9.23-9. Village of Wesley Hills NFIP Summary of Policy and Claim Statistics

# Policies	12
# Claims (Losses)	7
Total Loss Payments	\$90,283
# Repetitive Loss Properties (NFIP definition)	0
# Repetitive Loss Properties (FMA definition)	0
# Severe Repetitive Loss Properties	0
# Policies Within the 1percent Annual Chance Flood Boundary	0

NFIP Definition of Repetitive Loss: The NFIP defines a repetitive loss property as any insurable building for which two or more claims of more than \$1,000 were paid by the NFIP within any rolling 10-year period since 1978.

FMA Definition of Repetitive Loss: FEMA’s Flood Mitigation Assistance (FMA) program defines a repetitive loss property as any insurable building that has incurred flood-related damage on two occasions, in which the cost of the repair, on average, equaled or exceeded 25 percent of the market value of the structure at the time of each such flood event.

Definition of Severe Repetitive Loss: A residential property covered under an NFIP flood insurance policy and: (a) That has at least four NFIP claim payments over \$5,000 each, and the cumulative amount of such claims payments exceeds \$20,000; or (b) For which at least two separate claims payments have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building. At least two of the claims must have occurred within any 10-year period, more than 10 days apart.

Source: FEMA, December 2023

Note: RL count may include properties also identified as SRL.

Flood Vulnerability Summary

Table 9.23-10 provides a summary of the NFIP program in Village of Wesley Hills.

Table 9.23-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	The resident areas that are prone to flooding are Grandview Ave, Spook Rock Road, Wesley Chapel, Timber Trail, Lime Kiln Road, Terrace Road, and Willow Tree Road.
Do you maintain a list of properties that have been damaged by flooding?	Yes
Do you maintain a list of property owners interested in flood mitigation?	Yes
How many homeowners and/or business owners are interested in mitigation (elevation or acquisition)?	87
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what projects are underway.	No
How do you make Substantial Damage determinations? •	Should there be a major event, the Village calls upon our Village Engineer, Town of Ramapo, and County of Rockland for guidance.
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	None
How many properties have been mitigated (elevation or acquisition) in your jurisdiction? • If there are mitigation properties, how were the projects funded?	Yes • FEMA project on Martha Road • Wesley Chapel Culvert – BRIDGE NY Grant
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If not, state why.	Yes
NFIP Compliance	
What local department is responsible for floodplain management?	Building Department
Are any certified floodplain managers on staff in your jurisdiction?	Yes
Do you have access to resources to determine possible future flooding conditions from climate change?	Yes, FEMA has a lot of resources
Does your floodplain management staff need any assistance or training to support its floodplain management program? • If so, what type of assistance/training is needed?	No, they receive training thru FEMA, NYDEC and RCBOC.
Provide an explanation of NFIP administration services you provide (e.g., permit review, GIS, education/outreach, inspections, engineering capability)	permit review, GIS, education/outreach, inspections, engineering capability
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	Physical size of structure, drainage improvements, Planning Board approval.
What are the barriers to running an effective NFIP program in the community, if any?	Education
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? • If so, state the violations.	No

NFIP Topic	Comments
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	February 20, 2020
What is the local law number or municipal code of your flood damage prevention ordinance?	Chapter 119
What is the date that your flood damage prevention ordinance was last amended?	2010
Does your floodplain management program meet or exceed minimum requirements? • If exceeds, in what ways?	Meet the requirements
Are there other local ordinances, plans or programs (e.g., site plan review) that support floodplain management and meeting the NFIP requirements? For instance, does the planning board or zoning board consider efforts to reduce flood risk when reviewing variances such as height restrictions?	Yes, Planning Board reviews all drainage plans.
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	No

9.23.5 Growth/Development Trends

Understanding how past, current, and projected development patterns have or are likely to increase or decrease risk in hazard areas is a key component to appreciating a jurisdiction’s overall risk to its hazards of concern. Recent and expected future development trends, including major residential/commercial development and major infrastructure development, are summarized in Table 9.23-11 through Table 9.23-13.

Table 9.23-11. Number of Building Permits for New Construction Issued Since the Previous HMP

	New Construction Permits Issued			Total
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	
2018				
Total Permits	7	0	6	13
Permits within SFHA	0	0	0	0
2019				
Total Permits	3	0	2	5
Permits within SFHA	0	0	0	0
2020				
Total Permits	8	0	1	9
Permits within SFHA	0	0	0	0
2021				
Total Permits	7	0	1	8
Permits within SFHA	0	0	0	0
2022				
Total Permits	3	0	3	6
Permits within SFHA	0	0	0	0

SFHA = Special Flood Hazard Area (1percent flood event)

Table 9.23-12. Recent Major Development and Infrastructure from 2018 to Present

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
AMS Acquisitions	Subdivision	14 lots	Terrace Road	N/A	Planning Board

* Only location-specific hazard zones or vulnerabilities identified.

Table 9.23-13. Known or Anticipated Major Development and Infrastructure in the Next Five Years

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
There is no known or anticipated major development or infrastructure in the next five years.					

* Only location-specific hazard zones or vulnerabilities identified.

9.23.6 Jurisdictional Risk Assessment

The hazard profiles in Volume I provide detailed information regarding each planning partner’s vulnerability to the identified hazards, including summaries of the Village of Wesley Hills risk assessment results and data used to determine the hazard ranking. Key local risk assessment information is presented below.

Hazard Areas

Hazard area maps provided below illustrate the probable hazard areas impacted within the Village are shown in Figure 9.23-1 through Figure 9.23-2. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps are provided only for hazards that can be identified clearly using mapping techniques and technologies and for which Wesley Hills has significant exposure. The maps show the location of potential new development, where available.

The following critical facilities were noted by the Village following the creation of the maps below and after the risk assessment. Although not present in Figure 9.23-1 and Figure 9.23-2, Table 9.23-14 lists additional critical facilities for the Village of Wesley Hills.

Table 9.23-14. Additional Critical Facilities in the Village of Wesley Hills

Name	Address
Cell Tower at Village Hall	432 Route 306
Ohr Reuven School	251-259 Grandview Avenue
Terrace Avenue New Development	15 Terrace Road
Forshay Road Well	Forshay Road
Lime Kiln Road Well	Lime Kiln Road
Ahavat Yisreal of Wesley Hills	126 East Willow Tree Road
Congregation Anshei Sfar	42 Powder Horn Drive
Congregation Ahavas Yitzchok	73 Forshay Road
Congregation Ateres Rosh	16 Charlotte Drive
Congregation Bais Baruch	15 Martha Road
Congregation Bais Yakov Yosef Ostrow	5 Ridgeway Terrace
Congregation Derech Emes	34 Wilder Road
Congregation Khal Chasidim	2 Deerwood Road
Congregation Shar Hashamayim	71 East Willow Tree Road
Congregation Tifferes Israel / Bais Avigdor	57 Lime Kiln Road
Congregation Torei Zahav / Anshei Chesed	62 Lime Kiln Road
Congregation Trisk Tolna	33 Glenbrook Road
Kehillas Bais Yehuda of Wesley Hills	23 Lime Kiln Road
Kehillas Yeshorim of Wesley Hills	1 Harriet Lane

Name	Address
Khal Zichron Michoel	153 Grandview Avenue
Kol Yaakov	29 Wilder Road
Kollel Sharei Tefilla	22 Skylark Drive
Village Green Shul	4 Village Green

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Figure 9.23-1. Village of Wesley Hills Flood and Dam Inundation Hazard Area Extent and Location

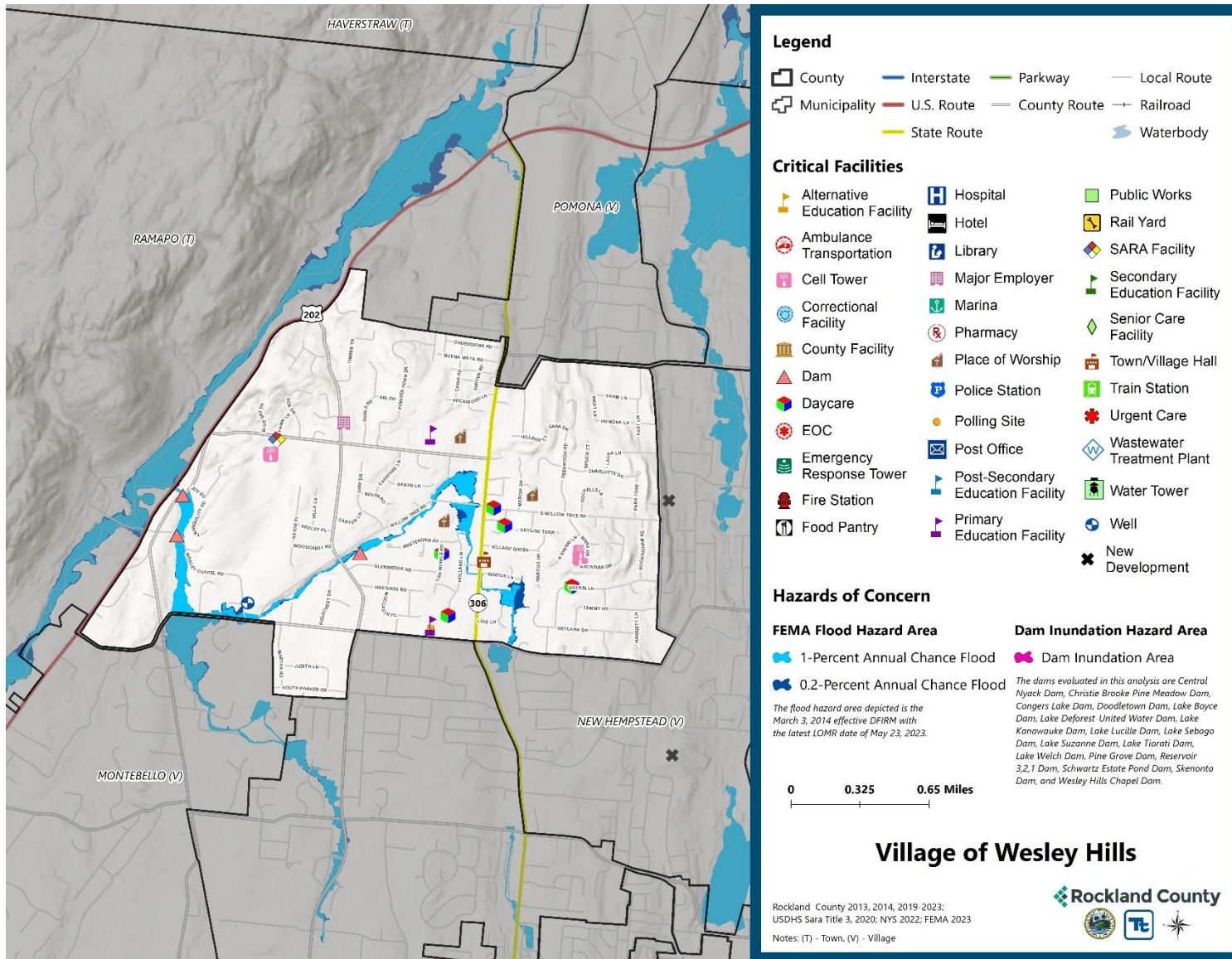
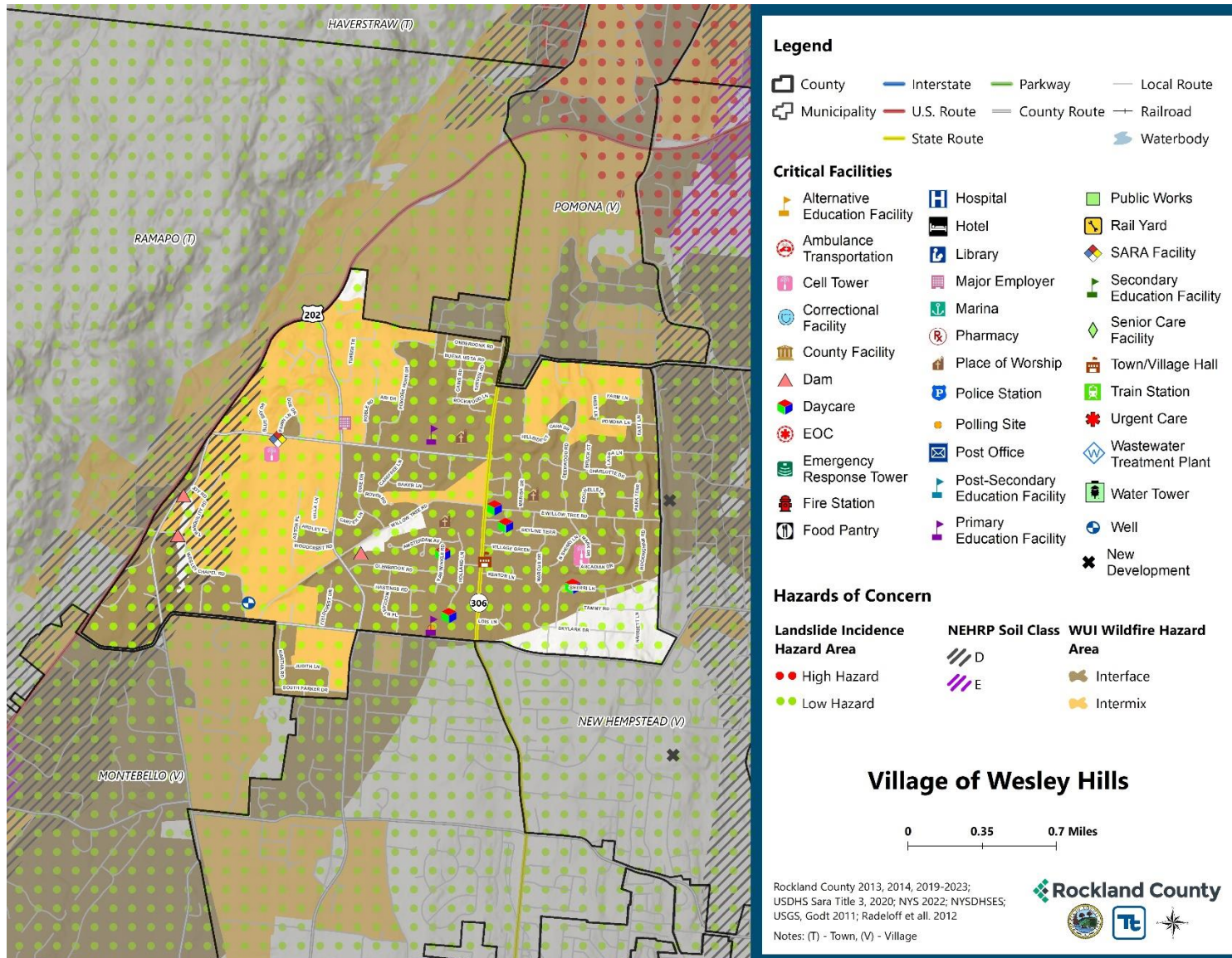


Figure 9.23-2. Village of Wesley Hills Landslide, Earthquake, and Wildfire Hazard Area Extent and Location



Hazard Event History

The history of natural and non-natural hazard events in the Village of Wesley Hills is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 9.23-15 provides details on loss and damage in the Village during hazard events since the last hazard mitigation plan update.

Table 9.23-15. Hazard Event History in the Village of Wesley Hills

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Summary of Damage and Losses in the Village
Jan 20, 2020 - May 11, 2023	New York Covid-19 (3434-EM-NY, 4480-DR-NY)	Yes	The Covid-19 pandemic resulted in nationwide shutdowns, social distancing and masking requirements, and immunization efforts. Since the start of the pandemic, roughly 950 deaths have been reported in Rockland County. The federal Public Health Emergency expired in May 2023, but illness continues to occur as the virus shifts to becoming endemic.	Received \$607,075.10 in ARPA funds
April 13, 2020	High winds	No	High winds across the county led to downed trees power outages, closed roads, and approximately \$200,000 in property damage.	The Village Hall did not experience any property damage. Village Hall has a generator and is used for a warming, cooling, and power station. Local and County roadways in the Village were closed. Grandview Ave, Spook Rock Road were closed due to flooding. The Village had numerous residents that were without power.
August 4, 2020	New York Tropical Storm Isaias (4567-DR-NY)	Yes	The center of Isaias passed about 65 miles west of New York City at 3 pm on August 4, 2020. Tropical storm force winds extended well east of the center of circulation. In addition, 1 to 3 inches of rainfall, highest west, were recorded across the county. These types of winds and rainfall across the area resulted in numerous trees and tree limbs being downed, power outages, damages to homes and automobiles, and disruption to transit.	The Village Hall did not experience any property damage. Village Hall has a generator and is used for a warming, cooling, and power station. Local and County roadways in the Village were closed. Grandview Ave, Spook Rock Road were closed due to flooding. The Village had numerous residents that were without power.

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Summary of Damage and Losses in the Village
August 21-24, 2021	New York Hurricane Henri (3565-EM-NY)	Yes	Rainfall from Tropical Storm Henri resulted in widespread flash flooding across southeastern New York, particularly portions of the Lower Hudson Valley. Rainfall totals generally ranged from 2-5 inches, with this rain coming in addition to the 2-5 inches that fell during the predecessor rainfall event the night before.	The Village Hall did not experience any property damage. Village Hall has a generator and is used for a warming, cooling, and power station. Local and County roadways in the Village were closed. Grandview Ave, Spook Rock Road were closed due to flooding. The Village had numerous residents that were without power.
September 1-3, 2021	New York Remnants of Hurricane Ida (3572-EM-NY, 4615-DR-NY)	Yes	Extremely heavy rainfall associated with the remnants of Hurricane Ida overspread southeast New York during the evening of September 1 and continued through the early morning hours of September 2. Rainfall totals ranged from 5-8 inches across much of the region, with much of that rain falling in just a few hours. This resulted in widespread catastrophic flash flooding.	The Village Hall did not experience any property damage. Village Hall has a generator and is used for a warming, cooling, and power station. Local and County roadways in the Village were closed. A drainage easement located at 7 Martha Road has a pipe that blew out and required a full replacement. The Village submitted a FEMA application for reimbursement with the Town of Ramapo. We are expecting reimbursement from FEMA in the amount of \$201,000.00. The Village had numerous residents that were without power.
July 9-10, 2023	Severe Storm, Flooding		Severe storms and flooding resulted in road closures, including portions of the Palisades Interstate Parkway, throughout Rockland County.	The Village Hall did not experience any property damage. Village Hall has a generator and is used for a warming, cooling, and power station. Local and County roadways in the Village were closed. Grandview Ave, Spook Rock Road were closed due to flooding. Flooding occurred on Timber Trail, Powerhorn, Terrace Road subdivision and E Willow Tree Road. The Village is still evaluating the Timber Trail culvert for repair.

EM = Emergency Declaration (FEMA)
 FEMA = Federal Emergency Management Agency
 DR = Major Disaster Declaration (FEMA)
 N/A = Not applicable

Hazard Ranking and Vulnerabilities

The hazard profiles in Volume I have detailed information regarding each planning partner’s vulnerability to the identified hazards. The following summarizes presents key risk assessment results for the Village of Wesley Hills.

Hazard Ranking

The participating jurisdictions have differing degrees of vulnerability to the hazards of concern, so each jurisdiction ranked its own degree of risk to each hazard. The community-specific hazard ranking is based on problems and impacts identified by the risk assessment presented in Volume I. The ranking process involves an assessment of the likelihood of occurrence for each hazard; the potential impacts of the hazard on people, property, and the economy; community capabilities to address the hazard; and changing future climate conditions. Wesley Hills reviewed the County hazard ranking and individual results to assess the relative risk of the hazards of concern to the community. During the review of the hazard ranking, the Village indicated the following:

- During the review of the hazard/vulnerability risk ranking, the Village indicated the rankings were accurate.

Table 9.23-16 shows Wesley Hills’ final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 9.23-16. Hazard Ranking

Hazard	Rank
Dam Failure	Low
Disease Outbreak	Medium
Drought	Medium
Earthquake	Low
Extreme Temperature	Medium
Flood	Medium
Landslide	Low
Severe Weather	High
Severe Winter Weather	High
Wildfire	Medium

Note: The scale is based on the hazard rankings established in Volume I, modified as appropriate based on review by the jurisdiction

Critical Facilities

Table 9.23-17 identifies critical facilities in the community located in the 1 percent and 0.2 percent annual chance floodplains.

Table 9.23-17. Critical Facilities Flood Vulnerability

Name	Type	Exposure		Addressed by Proposed Action	Already Protected to 0.2percent Flood Level (describe protections)
		1percent Event	0.2percent Event		
Wesley Chapel Dam #1	Dam	Yes	Yes	2024-WesleyHillsV-09	-
Wesley Chapel Dam #2	Dam	Yes	Yes	2024-WesleyHillsV-09	-
Willow Tree Park Dam	Dam	Yes	Yes	2024-WesleyHillsV-09	-

Source: Rockland County 2023, FEMA

Identified Issues

After review of the Village of Wesley Hills’ hazard event history, hazard rankings, hazard location, and current capabilities, the Village of Wesley Hills identified the following vulnerabilities within their community:

- Wesley Chapel culvert lost its headwalls and has block exposed. The culvert has received damage from Hurricane Floyd and each storm thereafter. Pieces of the culvert have fallen off causing the structure to be in disrepair requiring us to reduce the weight limit on the roadway above it.
- The Village has not provided their stormwater outfall data to Rockland County.
- Several areas in the Village are flood prone and need to be addressed, including Grandview Ave, Spook Rock Road, Wesley Chapel, Timber Trail, Lime Kiln Road, Terrace Road, and Willow Tree Road.
- There is an old dam and spillway in need of repair.
- Floodplain management staff and the building inspector are not Certified Floodplain Managers.
- The Village does not track permits in hazard areas.
- While the Village does not have any repetitive or severe repetitive loss properties, there are 12 flood insurance properties and 7 reported flood-related claims. The Village should inquire with property owners on flood mitigation solutions.
- There are multiple dams, which are critical infrastructures, located in the 1- and 0.2-percent flood hazard areas. These structures have the potential to impact those living nearby.
- The Village currently does not have a comprehensive education and outreach program. There is a need to educate residents and businesses about storm mitigation, preparation, response, and recovery.

9.23.7 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and prioritizes actions to address over the next five years.

Past Mitigation Initiative Status

Additional Mitigation Efforts

In addition to the mitigation initiatives completed in Table 9.23-18, Village of Wesley Hills did not identify any mitigation efforts completed since the last HMP.

Table 9.23-18 indicates progress on the Village’s mitigation strategy identified in the 2019 HMP. Actions that are still recommended but not completed or that are in progress are carried forward and combined with new actions as part of the mitigation strategy for this plan update. Previous actions that are now ongoing programs and capabilities are indicated as such and are presented in the capability assessment earlier in this annex.

Additional Mitigation Efforts

In addition to the mitigation initiatives completed in Table 9.23-18, Village of Wesley Hills did not identify any mitigation efforts completed since the last HMP.

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Table 9.23-18. Status of Previous Mitigation Actions

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
WH-1	Replace the Wesley Chapel Culvert	Flood, Severe Storm	Village Engineer	Wesley Chapel culvert lost its headwalls and has exposed block. Replace the Wesley Chapel culvert; lost its headwalls and is exposed block; lost the guardrail a few times and the Town of Ramapo has secured each time repairing and re-mortaring the block.	1. In Progress 2. Received NYS grant money and went out to bid, but all bids came in two times the estimated cost. Village will be refurbishing the culvert with budgeted money in 2024 and the BRIDGE NY grant.	1. Include 2. Keep as is 3. Not applicable
WH-2	Joy Road and Spook Rock Road Culvert Upgrade	Flood, Severe Storm	Village Engineer	Undersized culvert. Upgrade culvert at Joy Road and Spook Rock Road	1. No Progress 2. The Village does not have jurisdiction for this culvert.	1. Discontinue 2. Not applicable 3. The Village does not have jurisdiction for this culvert.
WH-3	VanWinkle Culvert Improvements	Flood, Severe Storm	Village Engineer	Existing culverts are silted over and in need of being repaired and cleaned. Culvert on VanWinkle – maintenance and repair to existing culverts that are silted over and need the inlets and outlets cleaned of debris in 2017 (\$15,000); funding through earmark Senator Thomas P. Morahan	1. Completed 2. Not applicable	1. Discontinue 2. Not applicable 3. Action was completed

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
WH-4	Stormwater Outfall Data Integration	Flood, Severe Storm	Village Engineer	<p>Need to provide their stormwater outfall data to Rockland County.</p> <p>The Village, through its participation in the Stormwater Consortium, will provide and ensure their stormwater outfall data is included in the Rockland County GIS web portal. The Village has the funding set aside to meet this obligation for the MS4 permit (2016 allocated and move forward to the 2017 budget) once an action plan is in place through the Stormwater Consortium and Rockland County.</p>	<p>1. In Progress</p> <p>2. Every 4 years the Village inspects the outfalls in the Village.</p>	<p>1. Include</p> <p>2. Keep as is</p> <p>3. Not applicable</p>
WH-5	Flood Prone Road Mitigation Measures	Flood, Severe Storm	Rockland County DPW and Town DPW; The Village will coordinate as needed	<p>Several areas in the Village are flood prone and need to be addressed.</p> <p>The Village will continue to work with Rockland County DPW and the Town to address flood prone road systems. For example, Rockland County to repair damaged wall along Spook Rock Rd. containing Wesley Chapel Pond #2. Spook Rock to the confluence of the Mahwah in danger – County-led project.</p>	<p>1. No Progress</p> <p>2. Not applicable</p>	<p>1. Include</p> <p>2. Keep as is</p> <p>3. Not applicable</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
WH-6	Dam and Spillway Improvements	Flood, Severe Storm	Village Engineer; Town of Ramapo; USACE; NYSDEC	<p>The dam in the village is need of repair.</p> <p>There is an old dam and spillway that is not regulated by the NYSDEC but regulated by USACE and there is an associated wetland. Not an imminent failure but is in need of repair. Install walking paths in Bokar Park and connect to Willow Tree Park (Town owned). These improvements will require a joint permit for USACE and NYSDEC for stream disturbance to enhance the park system in the Town by having a Village feature.</p>	<p>1. No Progress 2. Not applicable</p>	<p>1. Include 2. Keep as is 3. Not applicable</p>
WH-7	Staff Credentialling	Flood	Building Inspector	<p>Floodplain management staff and the building inspector are not Certified Floodplain Managers.</p> <p>The Building Inspector, the NFIP Floodplain Administrator, obtain his Certified Floodplain Managers certification.</p>	<p>1. In Progress 2. Action assists in maintaining the CFM certification for the building inspector and his/her staff.</p>	<p>1. Include 2. Change to continued education for floodplain administrator and staff for CFM certification 3. Not applicable</p>

Proposed Hazard Mitigation Initiatives for the HMP Update

Wesley Hills participated in the mitigation strategy workshop for this HMP to identify appropriate actions to include in a local hazard mitigation strategy. Its comprehensive consideration of all possible activities to address hazards of concern included review of the following FEMA documents:

- FEMA 551 “Selecting Appropriate Mitigation Measures for Floodprone Structures” (March 2007)
- FEMA “Mitigation Ideas—A Resource for Reducing Risk to Natural Hazards” (January 2013).

The action worksheets included at the end of this annex list the mitigation actions that Wesley Hills would like to pursue in the future to reduce the effects of hazards. The actions are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in the Village’s priorities.

Table 9.23-19 indicates the range of proposed mitigation action categories. The four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table to further demonstrate the wide range of activities and mitigation measures selected.

Volume I identifies 14 evaluation criteria for prioritizing the mitigation actions. To assist with rating each mitigation action as high, medium, or low priority, a numeric rank is assigned (-1, 0, or 1) for each of the evaluation criteria. Table 9.23-20 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Table 9.23-19. Analysis of Mitigation Actions by Hazard and Category

Hazard	Actions That Address the Hazard, by Action Category									
	FEMA				CRS					
	LPR	SIP	NSP	EAP	PR	PP	PI	NR	SP	ES
Dam Failure	2	1	1	1	2	2	1	1	1	1
Disease Outbreak	-	-	-	1	-	1	1	-	-	-
Drought	-	-	-	1	-	1	1	-	-	-
Earthquake	1	-	-	1	1	1	1	-	-	-
Extreme Temperature	-	-	-	1	-	1	1	-	-	-
Flood	3	3	-	2	2	2	2	-	3	2
Landslide	1	-	-	1	1	1	1	-	-	-
Severe Weather	1	1	-	1	-	1	1	-	1	1
Severe Winter Weather	-	-	-	1	-	1	1	-	-	-
Wildfire	1	-	-	1	1	1	1	-	-	-

Local Plans and Regulations (LPR)—These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.

Structure and Infrastructure Project (SIP)—These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct structures to reduce the impact of hazards.

Natural Systems Protection (NSP)—These are actions that minimize damage and losses and preserve or restore the functions of natural systems.

Education and Awareness Programs (EAP)—These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities

Preventative Measures (PR)—Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.

Property Protection (PP)—These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.

Public Information (PI)—Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.

Natural Resource Protection (NR)—Actions that minimize hazard loss and preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.

Structural Flood Control Projects (SP)—Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.

Emergency Services (ES)—Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities

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Table 9.23-20. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Agency Champion	Total	High / Medium / Low
2024-WesleyHillsV-01	Replace the Wesley Chapel Culvert	0	1	1	1	1	0	1	0	1	0	1	1	1	1	10	Medium
2024-WesleyHillsV-02	Stormwater Outfall Data Integration	0	1	1	1	1	1	1	0	1	1	1	1	1	1	12	High
2024-WesleyHillsV-03	Flood Prone Road Mitigation Measures	0	1	1	1	1	0	1	0	1	0	1	1	0	1	9	Medium
2024-WesleyHillsV-04	Dam and Spillway Improvements	1	1	1	1	1	1	0	1	1	0	1	1	1	0	11	High
2024-WesleyHillsV-05	Staff Credentialling	1	1	1	1	1	1	0	1	1	1	1	1	0	1	12	High
2024-WesleyHillsV-06	Permit Tracking	0	1	1	1	1	1	1	0	1	1	1	1	0	1	11	High
2024-WesleyHillsV-07	Repetitive and Severe Repetitive Loss Properties	1	1	1	1	1	0	1	1	1	1	1	1	0	1	12	High
2024-WesleyHillsV-08	Dam Owner Partnership	1	1	1	1	1	1	0	1	1	0	1	1	1	0	11	High
2024-WesleyHillsV-09	Public Education and Outreach	1	1	1	1	1	1	0	1	1	1	1	1	0	1	12	High

Note: Volume I, Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14).

Action 2024-Wesley HillsV-01. Replace the Wesley Chapel Culvert

Action Name:	Replace the Wesley Chapel Culvert	
Description of the Problem:	Wesley Chapel culvert lost its headwalls and has block exposed. The culvert has received damage from Hurricane Floyd and each storm thereafter. Pieces of the culvert have fallen off causing the structure to be in disrepair requiring us to reduce the weight limit on the roadway above it.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	Replace the Wesley Chapel culvert; lost its headwalls and is exposed block; lost the guardrail a few times and the Town of Ramapo has secured each time repairing and re-mortaring the block. Received NYS grant money and went out to bid, but all bids came in two times the estimated cost. Village will be refurbishing the culvert with budgeted money in 2024.	
Lead Agency:	Village of Wesley Hills Building Department	
Supporting Agencies:	Town of Ramapo	
Estimated Cost:	Medium	
Potential Funding Sources:	BRIDGE NY	
Implementation Timeline:	Within 2 years	
Goals Met:	2, 5	
Benefits:	Overall flooding will be reduced, which will result in less frequency of road closures and reduced damage occurring to culverts and roadways during severe events. Businesses are likely to remain in place if they are able to remain open, or re-open sooner following a flood.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	This action will assist socially vulnerable populations whose properties are impacted by flooding the culvert.	
Impact on Critical Facilities/Lifelines:	This action will replace the Wesley Chapel culvert in the Village, which is a critical piece of infrastructure. Furthermore, transportation routes will be more likely to remain open and access to health and medical facilities will be maintained, both for healthcare workers and the population who requires treatment for injuries and illness.	
Impact on Capabilities	This action will upgrade the stormwater management capabilities of the Village.	
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.	
Climate Change Considerations:	Climate change is likely to result in more frequent and severe rainfall events. This action upsizes culvert sizes to meet changing stormwater needs as the result of climate change.	
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium
		<input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No Action	-
	Remove roadway	Roadway cannot be removed
	Raingardens	Raingardens are unlikely to be able to absorb enough stormwater to prevent flooding during severe rainfall events.

Action 2024-Wesley HillsV-02. Stormwater Outfall Data Integration

Action Name:	Stormwater Outfall Data Integration		
Description of the Problem:	The Village has not provided their stormwater outfall data to Rockland County. Information on outfall locations can be used to optimize stormwater management efforts and monitor potential overflows during floods and severe storm events. Not having this information readily available presents an obstacle to comprehensive stormwater management.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The Village, through its participation in the Stormwater Consortium, will provide and ensure their stormwater outfall data is included in the Rockland County GIS web portal. The Village has the funding set aside to meet this obligation for the MS4 permit once an action plan is in place through the Stormwater Consortium and Rockland County.		
Lead Agency:	Floodplain Administrator		
Supporting Agencies:	Village of Wesley Hills, Rockland County		
Estimated Cost:	Low		
Potential Funding Sources:	Village Budget		
Implementation Timeline:	Within 1 year		
Goals Met:	3, 5		
Benefits:	Inputting data on stormwater outfalls will allow an inventory to be created of stormwater facilities in the Village.		
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	This action will permit the evaluation of how stormwater outfalls may impact locations near where socially vulnerable populations reside.		
Impact on Critical Facilities/Lifelines:	This action will track stormwater outfalls in the Village, which are critical pieces of infrastructure.		
Impact on Capabilities	This action will create a new capability for the Village and enhance its NFIP compliance.		
Impact on Future Development:	This action will permit the evaluation of how stormwater outfalls may impact future development.		
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem remains
	Request assistance from local colleges and universities in developing GIS mapping		May not be financially feasible or sustainable
	-		-

Action 2024-Wesley HillsV-03. Flood Prone Road Mitigation Measures

Action Name:	Flood Prone Road Mitigation Measures		
Description of the Problem:	Several areas in the Village are flood-prone, making them vulnerable to potential damage or lack of access. These issues need to be addressed at Grandview Ave, Spook Rock Road, Wesley Chapel, Timber Trail, Lime Kiln Road, Terrace Road, and Willow Tree Road.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The Village will continue to work with Rockland County DPW and the Town to address flood prone road systems. For example, Rockland County to repair damaged wall along Spook Rock Rd. containing Wesley Chapel Pond #2. Spook Rock to the confluence of the Mahwah in danger – County-led project.		
Lead Agency:	Village of Wesley Hills Building Department		
Supporting Agencies:	Rockland County DPW		
Estimated Cost:	Medium		
Potential Funding Sources:	FEMA BRIC, HMGP, Village Budget		
Implementation Timeline:	Within 5 years		
Goals Met:	2		
Benefits:	This action will identify measures to protect infrastructure in the transportation lifeline, which will lead to the assurance of clear roadways for evacuations, regular travel, and emergency responses.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	Areas that were previously vulnerable to frequency or severe flooding events will be less likely to be impacted by flooding events. Populations will be able to travel on clear, safe roadways.		
Impact on Critical Facilities/Lifelines:	This action will identify measures to protect infrastructure in the transportation lifeline, which will lead to the assurance of clear roadways for evacuations, regular travel, and emergency responses.		
Impact on Capabilities	Not applicable		
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.		
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events.		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem continues
	Relocate all flood prone road system		Not feasible
	Raise all flood prone roads		Cost prohibitive

Action 2024-Wesley HillsV-04. Dam and Spillway Improvements

Action Name:	Dam and Spillway Improvements		
Description of the Problem:	There is an old dam and spillway in the Village that is regulated by USACE, not NYSDEC. The dam and spillway require repairs and are not facing imminent failure. However, it is adjacent to a wetland that could be harmed if the dam failed or a flood occurred.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	. Install walking paths in Boker Park and connect to Willow Tree Park (Town of Ramapo owned). These improvements will require a joint permit for USACE and NYSDEC for stream disturbance to enhance the park system.		
Lead Agency:	Village of Wesley Hills Building Department		
Supporting Agencies:	Town of Ramapo, Rockland County, NYSDEC, USACE		
Estimated Cost:	Medium		
Potential Funding Sources:	FEMA BRIC, HMGP, Village Budget, USACE		
Implementation Timeline:	Within 5 years		
Goals Met:	1, 2, 3, 5		
Benefits:	This action will improve the safety and security of those who live within the dam inundation areas of the dams.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input checked="" type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input checked="" type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	The action will result in better preparedness within the Special Flood Hazard Area and inundation areas where significant risk to socially vulnerable populations exists.		
Impact on Critical Facilities/Lifelines:	Dams are considered a critical facility. This action will ensure the integrity of the dam.		
Impact on Capabilities	This action will improve safety and security capabilities of the Village by strengthening the integrity of the dam.		
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.		
Climate Change Considerations:	Climate change may result in an increase in the frequency and severity of weather-related disaster events, which may contribute to the likelihood of a dam failure event.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem continues
	Fix the dam, not the spillway		Spillway could lead to flooding and erosion
	Remove dam		May cause additional flood risk

Action 2024-Wesley HillsV-05. Staff Credentialling

Action Name:	Staff Credentialling	
Description of the Problem:	There are CFMs on Village staff, but the current building inspector is not CFM-certified. Maintaining CFM certification requires continued education credits to ensure floodplain managers are informed and able to implement practices that reduce the risk of potential damage from flooding.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	Provide training and/or certification for Village staff with NFIP regulations and floodplain management ordinances. Encourage staff to become Certified Floodplain Managers via the Association of State Floodplain Manager.	
Lead Agency:	Floodplain Administrator	
Supporting Agencies:	Village of Sloatsburg	
Estimated Cost:	Low	
Potential Funding Sources:	Village Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 3, 6	
Benefits:	This action will increase the NFIP capabilities of the Village and assure the Village’s NFIP program has enough staff to accomplish its goals and reach NFIP compliance.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Officials that are up to date on flood risk are more likely to encourage development outside areas of high flood risk, which is where socially vulnerable populations have historically resided. Safer dwellings may be developed in a less vulnerable location.	
Impact on Critical Facilities/Lifelines:	The opportunity will exist for leaders and operators of utilities and other essential services to attend training and provide direction on ways the prepare for, plan for, and prevent interruptions in service as a result of a flood.	
Impact on Capabilities	This action will enhance the Village’s current NFIP capabilities.	
Impact on Future Development:	Officials that understand best practices in floodplain management will have the opportunity to influence future development and prevent unsafe building in flood hazard areas.	
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related disaster events. This action will educate staff on NFIP regulations to assist with the flood hazard.	
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No action	Current problem continues
	Utilize surrounding municipal staff	Staff may not be available when needed
	Perform training, do not get CFM	May not have as much knowledge of NFIP regulations

Action 2024-Wesley HillsV-06. Permit Tracking

Action Name:	Permit Tracking		
Description of the Problem:	The Village does not track permits in hazard areas, so it is challenging to assess development and hazard impact trends in delineated hazard areas for dam failures, earthquakes, floods, landslides, and wildfire.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire	
Description of the Solution:	Implement a permit tracking process that records if a structure is located in a hazard area.		
Lead Agency:	Building Department		
Supporting Agencies:	Floodplain Administrator, Planning and Zoning Boards		
Estimated Cost:	Staff time, Low		
Potential Funding Sources:	Village Budget		
Implementation Timeline:	Within 2 years		
Goals Met:	2, 4, 5		
Benefits:	This action will allow all permits issued within the Borough to be tracked by hazard area.		
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	Not applicable		
Impact on Critical Facilities/Lifelines:	Permits issued for critical facilities in the floodplain or other hazard areas will be tracked.		
Impact on Capabilities	This action will create a new capability for the Village and enhance its NFIP compliance.		
Impact on Future Development:	This action may lead to permits being restricted within various identified hazard areas in the Village and municipal codes to be updated.		
Climate Change Considerations:	Climate change may result in an increase in the frequency and severity of weather-related disaster events. This action will increase the Borough’s ability to track structures located in hazard areas which may have conditions exacerbated by the impacts of climate change, such as floods and wildfires.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem remains
	Track only flood development permits		Will align with NFIP requirements, but will not consider other hazard areas in the Village

Action 2024-Wesley HillsV-07. Repetitive and Severe Repetitive Loss Properties

Action Name:	Repetitive and Severe Repetitive Loss Properties	
Description of the Problem:	The Village does not have any repetitive or severe repetitive loss properties, but there are 12 flood insurance properties and 7 reported flood-related claims. These properties may face increasing risks to flood damage due to changes in precipitation intensity and frequency, raising the possibility for these properties to become Repetitive/Severe Repetitive Loss Properties. These properties may require a disproportionate amount of municipal resources after hazard events if they are damaged. The Village does not track flood mitigation activities or interests of the affected property owners.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Village will promote and support non-structural flood hazard mitigation alternatives for at risk properties within the floodplain, including those that have been identified as Repetitive Loss (RL) and Severe Repetitive Loss (SRL), such as acquisition/relocation or elevation depending on feasibility. The parameters for this initiative would be funding, benefits versus cost, and willing participation of property owners.	
Lead Agency:	Floodplain Administrator	
Supporting Agencies:	Rockland County	
Estimated Cost:	Medium	
Potential Funding Sources:	FEMA FMA, FMA SWIFT, Village Budget, County Budget, Property Owners	
Implementation Timeline:	3 years	
Goals Met:	1, 2, 3	
Benefits:	This action would foster comprehensive floodplain management by removing at risk properties from the flood hazard area or elevating properties to reduce the flood risk.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Socially vulnerable populations may be able to have houses elevated or acquired when it would otherwise be unaffordable.	
Impact on Critical Facilities/Lifelines:	Removing structures from the floodplain decreases the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.	
Impact on Capabilities	This action will enhance the Village’s current NFIP capabilities.	
Impact on Future Development:	Increased outreach to homeowners within a flood prone area will limit construction in areas that are prone to hazard events. Homes may be acquired, which will remove those structures from the floodplain and prevent future development on those sites.	
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events.	
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No action	Current problem continues
	Construct flood walls/barriers around vulnerable areas	Costly and can divert floodwaters to other areas
	Deployable flood barriers for vulnerable areas	Requires a great deal of work to implement prior to each event

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Action 2024-Wesley HillsV-08. Dam Owner Partnership

Action Name:	Dam Owner Partnership	
Description of the Problem:	There are multiple dams, which are critical facilities, located in the 1- and 0.2-percent flood hazard areas that contain or are adjacent to existing residential areas. The municipality does not own all the dams in its jurisdictions and cannot itself implement mitigation actions to the structures.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	Work with the owners of the dams to ensure inspections and safety procedures are up to date. Work with the owners to identify mitigation actions to ensure the integrity of the dams and that it is protected up to the 0.2-percent flood hazard area.	
Lead Agency:	Village of Wesley Hills Building Department	
Supporting Agencies:	Dam Owners, NYSDEC	
Estimated Cost:	Low	
Potential Funding Sources:	Village Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 3, 5	
Benefits:	This action will improve the safety and security of those who live within the dam inundation areas of the dams and increase the resilience of responding agencies.	
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	The action will result in better preparedness within the Special Flood Hazard Area and inundation areas where significant risk to socially vulnerable populations exist.	
Impact on Critical Facilities/Lifelines:	Dams are considered a critical facility. This action will create an understanding of the safety procedures in place for each identified dam.	
Impact on Capabilities	This action will improve planning and response capabilities through the understanding of responsibilities and procedures.	
Impact on Future Development:	Not applicable	
Climate Change Considerations:	Climate change may result in an increase in the frequency and severity of weather-related disaster events, which may contribute to the likelihood of a dam failure event. This action will increase the capabilities to respond to these events.	
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No Action	Village will be unaware of any safety concerns for the dam or its condition
	Utilize information from NYSDEC	Owners may not be required to submit a safety plan to the State
	Utilize information from the National Inventory of Dams	Not all dams are listed on the inventory

Action 2024-Wesley HillsV-09. Public Education and Outreach

Action Name:	Public Education and Outreach	
Description of the Problem:	The Village currently does not have a comprehensive education and outreach program. During hazard events, the public may need to quickly access information about evacuation routes and shelters, or other steps they can take to protect themselves and their property. Residents may also need information about what services are available or offline due to flooding from intense precipitation, dam failure, severe storms, and snow melt; where to receive a vaccination or other healthcare in the event of a disease outbreak; public cooling or heat centers, such as libraries, during extreme temperatures; and evacuation areas for earthquakes, landslides, and wildfires.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	Develop and enhance the public awareness program on hazards, prevention, and mitigation. Continue to work with Rockland County on their program that provides information to the municipalities.	
Lead Agency:	Village of Wesley Hills Village Board	
Supporting Agencies:	Rockland County	
Estimated Cost:	Low	
Potential Funding Sources:	Village Budget	
Implementation Timeline:	1 year	
Goals Met:	1, 2, 3, 5	
Benefits:	This action will improve the current public education and outreach program in the Village by including discussions on disaster preparedness and hazard mitigation to residents and business owners, which will contribute to the resiliency of the Village.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Socially vulnerable populations will learn how to prepare for and mitigate the various hazards which may impact them in the Village.	
Impact on Critical Facilities/Lifelines:	Businesses, which may be considered critical facilities or lifelines, would be more informed on how to prepare for emergency events and mitigate the risks of potential hazards. With these businesses becoming more resilient, this action would contribute to their continuity of operations.	
Impact on Capabilities	This action would build upon the Village’s already existing public education and outreach program.	
Impact on Future Development:	Not applicable	
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related disaster events. This action will inform residents and business owners of how to reduce risk from hazards and how climate change may exacerbate those risks.	
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium
		<input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No action	Current methods remain the only ones used
	Rely on state or federal resources	Resources may be generalized and not specific to the risks in the Village

	Use only a few methods for distribution	Using only a few methods of distribution may hinder socially vulnerable populations from receiving the guidance
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SECTION 9. JURISDICTIONAL ANNEXES

9.24 VILLAGE OF WEST HAVERSTRAW

This jurisdictional annex to the Rockland County Hazard Mitigation Plan (HMP) provides information to assist public and private sectors in the Village of West Haverstraw with reducing losses from future hazard events. This annex is not guidance of what to do when a disaster occurs; its focus is on actions that can be implemented prior to a disaster to reduce or eliminate damage to property and people. The annex presents a general overview of the Village of West Haverstraw, describes who participated in the planning process, assesses the Village’s risk, vulnerability, and capabilities, and outlines a strategy for achieving a more resilient community.

9.24.1 Hazard Mitigation Planning Team

The Village of West Haverstraw identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Village departments. The Mayor represented the community on the Rockland County HMP Planning Partnership and Steering Committee and supported the local planning process requirements by securing input from persons with specific knowledge to enhance the plan. All departments were asked to contribute to the annex development through reviewing and contributing to the capability assessment, reporting on the status of previously identified actions, and participating in action identification and prioritization.

Table 9.24-1 summarizes Village officials who participated in the development of the annex and in what capacity. Additional documentation of the Village’s planning activities through Planning Partnership meetings is included in Volume I.

Table 9.24-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Anthony Sparta / DPW Superintendent Address: 130 Samsondale Avenue, West Haverstraw, NY 10993 Phone Number: (845) 429-4460 Email: asparta@westhaverstraw.org	Name/Title: Robert R. D’Amelio / Mayor Address: 130 Samsondale Avenue, West Haverstraw, NY 10993 Phone Number: (845) 947-2800 Email: Mayor@westhaverstraw.org
National Flood Insurance Program Floodplain Administrator	
Name/Title: Fred Viohl / Fire Inspector, Acting Building Inspector Address: 130 Samsondale Avenue, West Haverstraw, NY 10993 Phone Number: (845) 947-2800 Email: fviohl@westhaverstraw.org	
Additional Contributors	
Name/Title: Linda Donnelly / Principal Clerk Method of Participation: Provided feedback on draft annex; attended meetings; completed hazard event history survey	
Name/Title: Anthony Sparta / DPW Superintendent Method of Participation: Provided feedback on draft annex; attended meetings	
Name/Title: Robert R. D’Amelio / Mayor Method of Participation: Provided feedback on draft annex	
Name/Title: Fred Viohl / Fire Inspector, Acting Building Inspector Method of Participation: Provided feedback on draft annex; provided information on NFIP program	

9.24.2 Municipal Profile

The Village of West Haverstraw is located in the eastern half of the Town of Haverstraw, northwest of the Village of Haverstraw, east of the Hamlet of Thiells, south of the Town of Stony Point, and west of the Hudson River (Rockland County 2018). It has a total area of 1.5 square miles, none of which is water. The Village is a family-oriented residential neighborhood with a thriving commercial district (Village of West Haverstraw 2020).

Research has shown that some populations are at greater risk from hazard events because of decreased resources or physical abilities. These populations can be more susceptible to hazard events based on a number of factors including their physical and financial ability to react or respond during a hazard, and the location and construction quality of their housing. Data from the 2017-2021 American Community Survey indicates that 8.9 percent of the population is 5 years of age or younger, 12.1 percent is 65 years of age or older, 15.6 percent is non-English speaking, 12.8 percent is below the poverty threshold, and 9.3 percent is considered disabled.

9.24.3 Jurisdictional Capability Assessment and Integration

The Village of West Haverstraw performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Volume I describes the components included in the capability assessment and their significance for hazard mitigation planning. The jurisdictional assessment for this annex includes analyses of the following:

- Planning and regulatory capabilities
- Development and permitting capabilities
- Administrative and technical capabilities
- Fiscal capabilities
- Education and outreach capabilities
- Classification under various community mitigation programs
- Adaptive capacity to withstand hazard events

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into day-to-day local government operations. As part of the hazard mitigation analysis, planning and /policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress toward plan integration. Development of an updated mitigation strategy provided an opportunity for the Village of West Haverstraw to identify opportunities for integration of mitigation concepts that can be incorporated into municipal procedures.

Planning, Legal, and Regulatory Capability and Integration

Table 9.24-2 summarizes the regulatory tools that are available to Village of West Haverstraw.

Table 9.24-2. Planning, Legal, and Regulatory Capability and Integration

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Codes, Ordinances, & Regulations				
Building Code	Yes	Chapter 250 Zoning, Planning, and Building	State, Local	Code Enforcement Officer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The prevailing standards for building construction in the Village are those contained in the New York State Uniform Fire Prevention and Building Code. The Code Enforcement Officer shall be provided flood hazard certifications prior to the issuance of a certificate of occupancy or certificate of compliance.				
Zoning/Land Use Code	Yes	Chapter 250 Zoning, Planning, and Building	Local	Planning Board, Zoning Board of Appeals, Building Department
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The zoning provisions of this chapter are adopted for the purposes set forth in Article 7 of the Village Law which, in the interest of the protection and promotion of the public health, safety and welfare. The Zoning, Planning, and Building ordinance shall consider the following to protect and promote these interests: efficient and adequate public facilities and services, privacy for families, prevention and reduction of traffic congestion, maximum protection of residential areas, protection of business areas by reducing traffic congestion, preservation of historic and natural features, and accommodation of solar energy systems and access to sunlight necessary for those systems.				
Subdivision Code	Yes	Chapter 250, Article XVII Subdivision of Land Authorization and Procedures	Local	Planning Board, Building Department
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> It is declared to be the policy of the Village Planning Board to consider land subdivisions as part of a plan for the orderly, efficient, and economical development of the Village. Land to be subdivided shall be of such character that it can be used safely for building purposes without danger to health or peril from fire, flood, or other menace. Proper provision shall be made for drainage, water, sewerage, and other needed improvements. The Village’s subdivision regulations are supplemented by other provisions in the Zoning, Planning, and Building ordinance that enable special development controls in steep slope areas in recognition of potentially negative impacts of construction, such as flooding, erosion, and water runoff, among others.				
Site Plan Code	Yes	Chapter 250, Article XVI Site Development Plans	Local	Planning Board, Building Department
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Site development plan approval by the Planning Board shall be required for the erection or enlargement or exterior alteration of all buildings in all districts, except one- and two-family dwellings; any change in use or intensity of use which will affect the characteristics of the site in terms of parking, drainage, access, or utilities; and any application for a special permit. These provisions are supplemented by other portions of the Zoning, Planning, and Building ordinance that enable special development controls in steep slope areas in recognition of potentially negative impacts of construction, such as flooding, erosion, and water runoff, among others.				
Stormwater Management Code	Yes	Chapter 202 Stormwater Management	Local	Village Engineer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The purpose of this article is to establish minimum stormwater management requirements and controls to protect and safeguard the general health, safety, and welfare of the public. The ordinance identifies several objectives, including the minimization of increases in stormwater runoff from land activities in order to reduce flooding.				
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Real Estate Disclosure	Yes	New York State (NYS) mandate, Property Condition Disclosure Act, NY Code – Article 14 §460-467	State, Local	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The NYS mandate requires sellers to disclose to potential buyers whether their property is located in a designated floodplain.				
Growth Management	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Environmental Protection Ordinance(s)	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Flood Damage Prevention Ordinance	Yes	Chapter 112 Flood Damage Prevention	Federal, State, Local	Building Inspector
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
It is the purpose of this chapter to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in areas of special flood hazards in the Village. Identified objectives of this ordinance include minimizing public expenditure for flood controls and rescue/relief efforts, minimizing damage to public facilities and utilities, minimizing prolonged business interruptions, maintaining a stable tax base, provide that developers are notified that property is in an area of special flood hazards, and ensure that those who occupy such areas assume responsibility for their actions. New and substantially improved structures in the special flood hazard area shall have fully enclosed areas below the lowest floor that are usable solely for parking of vehicles, building access or storage in an area other than a basement.				
Wellhead Protection	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Emergency Management Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Climate Change Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Other: Freeboard	Yes	Chapter 112 Flood Damage Prevention	Federal, State, Local	Building Inspector
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
New York State requires new one- and two-family residences to be built with two feet of freeboard and all other construction types with one foot of freeboard. Additionally, the Village’s Flood Damage Prevention Ordinance requires that new and substantially improved structures in the special flood hazards area shall have fully enclosed areas below the lowest floor that are usable solely for parking of vehicles, building access or storage in an area other than a basement.				
Other: Cumulative Substantial Damage	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
Planning Documents				
General/Comprehensive Plan	Yes	Village of West Haverstraw Comprehensive Plan (1980)	Local	Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The Village Comprehensive Plan was adopted in 1980 but has not been updated. It does not refer to areas of natural hazards nor hazard mitigation.				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Capital Improvement Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Disaster Debris Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Floodplain Management or Watershed Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Stormwater Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Open Space Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Urban Water Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Habitat Conservation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Economic Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Community Wildfire Protection Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Community Forest Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Transportation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Agriculture Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Climate Action/ Resiliency/Sustainability Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Tourism Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Business/ Downtown Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Response/Recovery Planning				
Comprehensive Emergency Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Continuity of Operations Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Substantial Damage Response Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Threat & Hazard Identification & Risk Assessment	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Post-Disaster Recovery Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Public Health Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

Development and Permitting Capability

Table 9.24-3 summarizes the capabilities of Village of West Haverstraw to oversee and track development.

Table 9.24-3. Development and Permitting Capability

Indicate if your jurisdiction implements the following	Yes/No	Comment:
Do you issue development permits? <ul style="list-style-type: none"> If you issue development permits, what department is responsible? If you do not issue development permits, what is your process for tracking new development? 	Yes	Building Department
Are permits tracked by hazard area? (For example, floodplain development permits.)	Yes	-

Indicate if your jurisdiction implements the following	Yes/No	Comment:
Do you have a buildable land inventory? <ul style="list-style-type: none"> If you have a buildable land inventory, please describe 	No	-
Describe the level of build-out in your jurisdiction.	N/A	Areas in the Village available for future development include the R-1 residential district and the Planned Light Industrial District.

Administrative and Technical Capability

Table 9.24-4 summarizes potential staff and personnel resources available to Village of West Haverstraw and their current responsibilities that contribute to hazard mitigation.

Table 9.24-4. Administrative and Technical Capabilities

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
<i>Administrative Capability</i>		
Planning Board	Yes	The Planning Board reviews applications submitted for subdivisions and site plans. In approving the site development plan for any particular use, the Planning Board shall consider the design of the following: traffic access, circulation, parking, landscaping, screening, utilities and the overall character and appearance of the proposed use.
Zoning Board of Adjustment	Yes	The Zoning Board of Appeals (ZBA) reviews the applications requesting area and use variances. They may also grant special permits for uses authorized in our Village Zoning Code. Where it is determined that an area variance or use variance shall be granted, the variance shall be the minimum variance deemed necessary and adequate to afford the applicant the relief required and, at the same time, to protect the character of the neighborhood and the health, safety, and welfare of the community.
Planning Department	No	-
Mitigation Planning Committee	No	-
Environmental Board/Commission	No	-
Open Space Board/Committee	No	-
Economic Development Commission/Committee	No	-
Public Works/Highway Department	Yes	The Department of Public Works (DPW) provides municipal services in environmental services and solid waste. Each service contributes in making Village streets and public spaces clean, safe, attractive, and accessible. The DPW performs several daily and seasonal operations including trash, bulk, recycling, e-waste (electronics) and yard waste collection services, street cleaning, and park maintenance.
Construction/Building/Code Enforcement Department	Yes	Building Department
Emergency Management/Public Safety Department	No	The West Haverstraw Fire Department serves the Village.

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	Yes	The Department of Public Works (DPW) provides municipal services in environmental services and solid waste. Each service contributes in making Village streets and public spaces clean, safe, attractive, and accessible. The DPW performs several daily and seasonal operations including trash, bulk, recycling, e-waste (electronics) and yard waste collection services, street cleaning, and park maintenance.
Mutual aid agreements	Yes	West Haverstraw Fire Department
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	No	-
Other	No	-
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Sub-contractors
Engineers or professionals trained in building or infrastructure construction practices	Yes	Sub-contractors
Planners or engineers with an understanding of natural hazards	Yes	Sub-contractors
Staff with expertise or training in benefit/cost analysis	No	If required, the Village will contract for such services.
Professionals trained in conducting damage assessments	Yes	Building Inspector and Village Engineer on a matter-by-matter basis.
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	Yes	Engineer/Building Dept.
Environmental scientist familiar with natural hazards	Yes	Engineer
Surveyor(s)	No	-
Emergency Manager	No	-
Grant writer(s)	No	-
Resilience Officer	No	Depending upon the nature of the grant application, the Village prepares such applications in house or with the assistance of outside grant writers.
Other (this could include stormwater engineer, environmental specialist, etc.)	No	-

Fiscal Capability

Table 9.24-5 summarizes financial resources available to Village of West Haverstraw.

Table 9.24-5. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use? (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	Yes
Capital improvements project funding	Yes
Authority to levy taxes for specific purposes	Yes
User fees for water, sewer, gas or electric service	Yes

Financial Resources	Accessible or Eligible to Use? (Yes/No)
Impact fees for homebuyers or developers of new development/homes	No
Stormwater utility fee	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	No
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	No
Other federal or state Funding Programs	Consolidated Local Street and Highway Improvement Program (CHIPs)
Open Space Acquisition funding programs	No
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	NYDOT

Education and Outreach Capability

Table 9.24-6 summarizes the education and outreach resources available to Village of West Haverstraw.

Table 9.24-6. Education and Outreach Capabilities

Outreach Resources	Available? (Yes/No)	Comment:
Public information officer or communications office	No	-
Personnel skilled or trained in website development	Yes	Contracted
Hazard mitigation information available on your website	Yes	The Village maintains a website has links to the municipal newsletter, local laws and documents, local news, the annual budget, county websites, and emergency services. The village has identified a need to redevelop and update its website.
Social media for hazard mitigation education and outreach	No	-
Citizen boards or commissions that address issues related to hazard mitigation	No	-
Warning systems for hazard events	Yes	The County utilizes NY-Alert and CodeRed (the backup to NY-Alert) for emergency notifications (all Towns and Villages have access to it).
Natural disaster/safety programs in place for schools	No	-
Organizations that conduct outreach to socially vulnerable populations and underserved populations	No	-
Public outreach mechanisms / programs to inform citizens on natural hazards, risk, and ways to protect themselves during such events	No	-
If yes, please describe.	N/A	-

Community Classifications

Table 9.24-7 summarizes classifications for community programs available to Village of West Haverstraw.

Table 9.24-7. Community Classifications

Program	Participating? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-

Program	Participating? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	3	-
New York State Department of Environmental Conservation (NYSDEC) Climate Smart Community	Yes	None	7/26/2023
National Weather Service Storm Ready Certification	No	-	-
Firewise Communities classification	No	-	-
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable
 — = Unavailable

Adaptive Capacity

Adaptive capacity is defined as “the ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or respond to consequences” (IPCC 2022). Each jurisdiction has a unique combination of capabilities to adjust to, protect from, and withstand a future hazard event, future conditions, and changing risk. Table 9.24-8 summarizes the adaptive capacity for each identified hazard of concern and the Village’s capability to address related actions using the following classifications:

- Strong: Capacity exists and is in use.
- Moderate: Capacity might exist; but is not used or could use some improvement.
- Weak: Capacity does not exist or could use substantial improvement.

Table 9.24-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Disease Outbreak	Moderate
Drought	Moderate
Earthquake	Moderate
Extreme Temperature	Moderate
Flood	Moderate
Landslide	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

9.24.4 National Flood Insurance Program Compliance

This section provides specific information on the management and regulation of the regulatory floodplain, including current and future compliance with the National Flood Insurance Program (NFIP). The floodplain administrator listed in Table 9.24-1 is responsible for maintaining this information.

NFIP Summary

Table 9.24-9 summarizes the NFIP statistics for Village of West Haverstraw.

Table 9.24-9. Village of West Haverstraw NFIP Summary of Policy and Claim Statistics

# Policies	23
# Claims (Losses)	29
Total Loss Payments	\$3,917,935
# Repetitive Loss Properties (NFIP definition)	0
# Repetitive Loss Properties (FMA definition)	0
# Severe Repetitive Loss Properties	0
# Policies Within the 1 percent Annual Chance Flood Boundary	0

NFIP Definition of Repetitive Loss: The NFIP defines a repetitive loss property as any insurable building for which two or more claims of more than \$1,000 were paid by the NFIP within any rolling 10-year period since 1978.

FMA Definition of Repetitive Loss: FEMA’s Flood Mitigation Assistance (FMA) program defines a repetitive loss property as any insurable building that has incurred flood-related damage on two occasions, in which the cost of the repair, on average, equaled or exceeded 25 percent of the market value of the structure at the time of each such flood event.

Definition of Severe Repetitive Loss: A residential property covered under an NFIP flood insurance policy and: (a) That has at least four NFIP claim payments over \$5,000 each, and the cumulative amount of such claims payments exceeds \$20,000; or (b) For which at least two separate claims payments have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building. At least two of the claims must have occurred within any 10-year period, more than 10 days apart.

Source: FEMA, December 2023

Note: RL count may include properties also identified as SRL.

Flood Vulnerability Summary

Table 9.24-10 provides a summary of the NFIP program in Village of West Haverstraw.

Table 9.24-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	The Village of West Haverstraw is presently subject to flooding in areas adjacent to Minisceongo Creek, especially in the vicinity of Suffern Lane, Railroad Avenue, Grassy Point Road and east of Samsondale Avenue.
Do you maintain a list of properties that have been damaged by flooding?	Yes
Do you maintain a list of property owners interested in flood mitigation?	Yes
How many homeowners and/or business owners are interested in mitigation (elevation or acquisition)?	None
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what projects are underway.	No
How do you make Substantial Damage determinations?	The Village keeps track of properties that have been flood damaged but does not perform substantial damage estimates and therefore does not maintain lists/inventories of properties that have been substantially damaged.
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	N/A
How many properties have been mitigated (elevation or acquisition) in your jurisdiction? • If there are mitigation properties, how were the projects funded?	Unknown

NFIP Topic	Comments
Do your flood hazard maps adequately address the flood risk within your jurisdiction? <ul style="list-style-type: none"> If not, state why. 	Yes
NFIP Compliance	
What local department is responsible for floodplain management?	Building Inspector, Village Engineer
Are any certified floodplain managers on staff in your jurisdiction?	No
Do you have access to resources to determine possible future flooding conditions from climate change?	Yes, State and Federal resources.
Does your floodplain management staff need any assistance or training to support its floodplain management program? <ul style="list-style-type: none"> If so, what type of assistance/training is needed? 	The FPA feels empowered and capable to run an effective floodplain management program in the Village and is adequately supported and trained to fulfill the responsibilities of municipal floodplain administrator. However, the FPA would consider attending continuing education and/or certification training on floodplain management if it were offered in the County for all local floodplain administrators.
Provide an explanation of NFIP administration services you provide (e.g., permit review, GIS, education/outreach, inspections, engineering capability)	Permit review is the primary responsibility of the Village FPA; additional functions including maintaining records of FEMA Floodplain Maps and tracking updates and changes are the responsibility of the Building Department and Village Clerk. There are currently no education or outreach programs to the community regarding flood hazards/risk, and flood risk reduction through NFIP insurance, mitigation, etc.
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	N/A
What are the barriers to running an effective NFIP program in the community, if any?	None
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? <ul style="list-style-type: none"> If so, state the violations. 	No
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	April 29, 2021
What is the local law number or municipal code of your flood damage prevention ordinance?	Chapter 112 Flood Damage Prevention
What is the date that your flood damage prevention ordinance was last amended?	January 2014
Does your floodplain management program meet or exceed minimum requirements? <ul style="list-style-type: none"> If exceeds, in what ways? 	The program meets minimum requirements
Are there other local ordinances, plans or programs (e.g., site plan review) that support floodplain management and meeting the NFIP requirements? For instance, does the planning board or zoning board consider efforts to reduce flood risk when reviewing variances such as height restrictions?	The planning board and zoning board consider efforts to reduce flood risk when reviewing variances and conditional approvals. The Village has a Site Plan Ordinance.
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	Yes

9.24.5 Growth/Development Trends

Understanding how past, current, and projected development patterns have or are likely to increase or decrease risk in hazard areas is a key component to appreciating a jurisdiction’s overall risk to its hazards of concern. Recent and expected future development trends, including major residential/commercial development and major infrastructure development, are summarized in Table 9.24-11 through Table 9.24-13.

Table 9.24-11. Number of Building Permits for New Construction Issued Since the Previous HMP

	New Construction Permits Issued			Total
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	
2019				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2020				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2021				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2022				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2023				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0

SFHA = Special Flood Hazard Area (1 percent flood event)

Table 9.24-12. Recent Major Development and Infrastructure from 2018 to Present

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
The Village has had no recent major development or infrastructure between 2018 to present.					

* Only location-specific hazard zones or vulnerabilities identified.

Table 9.24-13. Known or Anticipated Major Development and Infrastructure in the Next Five Years

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
There are no known or anticipated major development of infrastructure in the Village in the next five years.					

* Only location-specific hazard zones or vulnerabilities identified.

9.24.6 Jurisdictional Risk Assessment

The hazard profiles in Volume I provide detailed information regarding each planning partner’s vulnerability to the identified hazards, including summaries of the Village of West Haverstraw’s risk assessment results and data used to determine the hazard ranking. Key local risk assessment information is presented below.

Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Village are shown in Figure 9.24-1 through Figure 9.24-2. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps are provided only for hazards that can be identified clearly using mapping techniques and technologies and for which West Haverstraw has significant exposure. The maps show the location of potential new development, where available.

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Figure 9.24-1. Village of West Haverstraw Flood and Dam Inundation Hazard Area Extent and Location

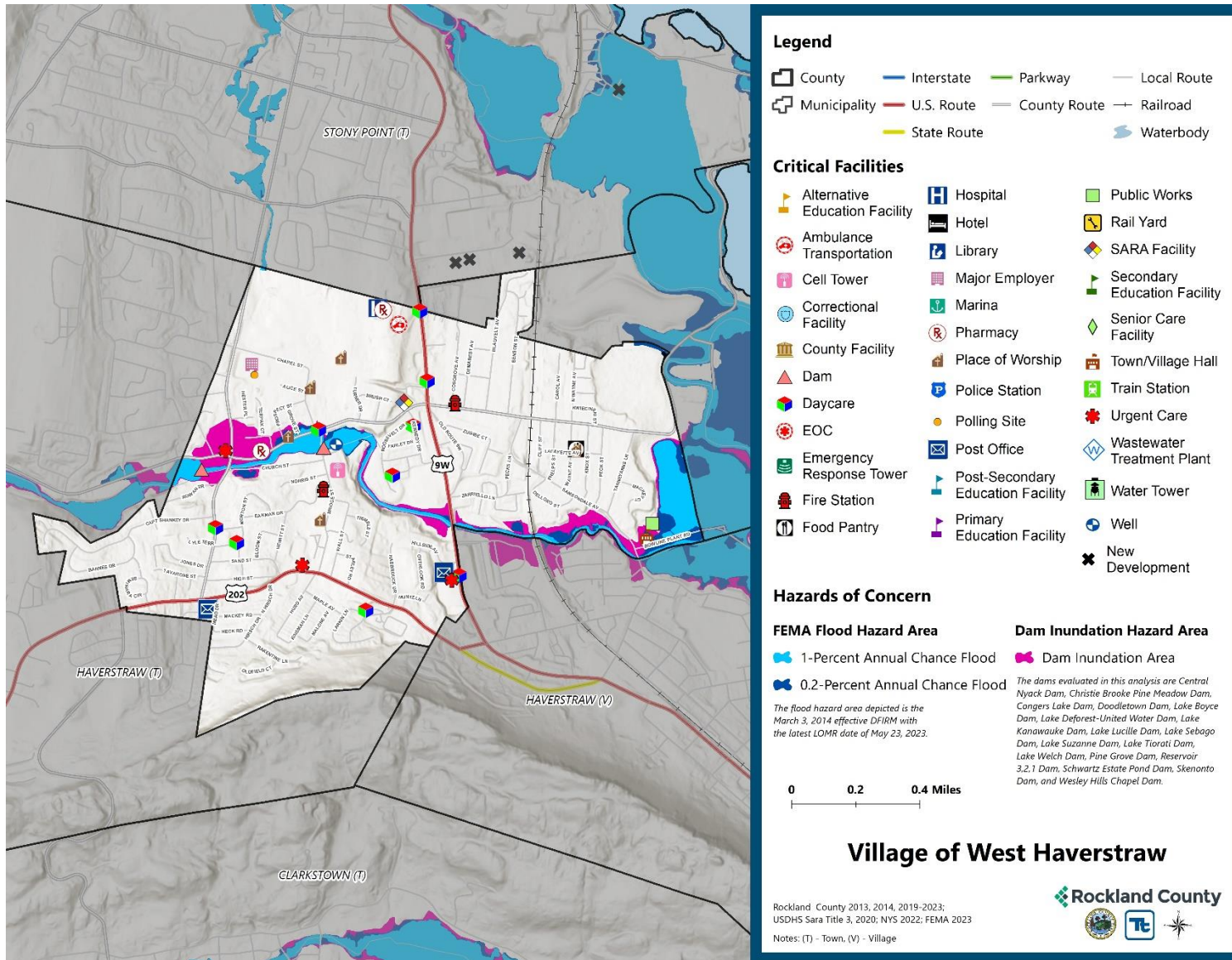
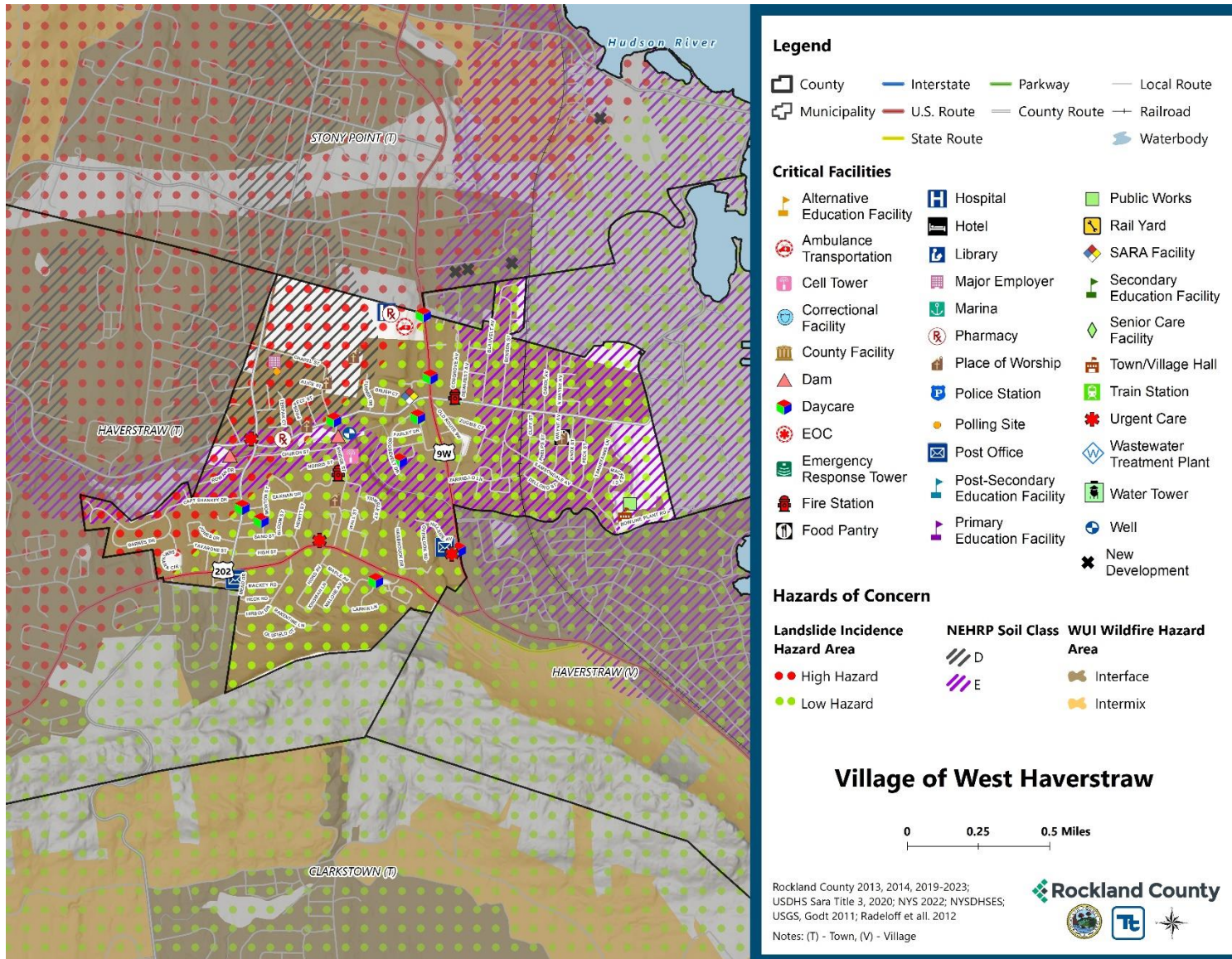


Figure 9.24-2. Village of West Haverstraw Landslide, Earthquake, and Wildfire Hazard Area Extent and Location



Hazard Event History

The history of natural and non-natural hazard events in the Village of West Haverstraw is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 9.24-14 provides details on loss and damage in the Village during hazard events since the last hazard mitigation plan update.

Table 9.24-14. Hazard Event History in the Village of West Haverstraw

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Summary of Damage and Losses in the Village
Jan 20, 2020 - May 11, 2023	New York Covid-19 (3434-EM-NY, 4480-DR-NY)	Yes	The Covid-19 pandemic resulted in nationwide shutdowns, social distancing and masking requirements, and immunization efforts. Since the start of the pandemic, roughly 950 deaths have been reported in Rockland County. The federal Public Health Emergency expired in May 2023 but illness continues to occur as the virus shifts to becoming endemic.	Minimal impacts from the COVID-19 pandemic.

EM = Emergency Declaration (FEMA)
 FEMA = Federal Emergency Management Agency
 DR = Major Disaster Declaration (FEMA)
 N/A = Not applicable

Hazard Ranking and Vulnerabilities

The hazard profiles in Volume I have detailed information regarding each planning partner’s vulnerability to the identified hazards. The following summarizes presents key risk assessment results for the Village of West Haverstraw.

Hazard Ranking

The participating jurisdictions have differing degrees of vulnerability to the hazards of concern, so each jurisdiction ranked its own degree of risk to each hazard. The community-specific hazard ranking is based on problems and impacts identified by the risk assessment presented in Volume I. The ranking process involves an assessment of the likelihood of occurrence for each hazard; the potential impacts of the hazard on people, property, and the economy; community capabilities to address the hazard; and changing future climate conditions. West Haverstraw reviewed the County hazard ranking and individual results to assess the relative risk of the hazards of concern to the community. During the review of the hazard ranking, the Village indicated the following:

- The disease outbreak hazard ranking was decreased from Medium to Low due to its occurrence being out of the Village’s control.
- The earthquake hazard was decreased from Medium to Low due to the infrequency of occurrence.
- The landslide hazard ranking was decreased from High to Low due to its infrequency of occurrence.
- The wildfire hazard ranking was decreased from Medium to Low due to its infrequency of occurrence.

Table 9.24-15 shows West Haverstraw’s final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 9.24-15. Hazard Ranking

Hazard	Rank
Dam Failure	Low
Disease Outbreak	Low
Drought	Medium
Earthquake	Low
Extreme Temperature	Medium
Flood	Medium
Landslide	Low
Severe Weather	High
Severe Winter Weather	High
Wildfire	Low

Note: The scale is based on the hazard rankings established in Volume I, modified as appropriate based on review by the jurisdiction

Critical Facilities

Table 9.24-16 identifies critical facilities in the community located in the 1 percent and 0.2 percent annual chance floodplains.

Table 9.24-16. Critical Facilities Flood Vulnerability

Name	Type	Exposure		Addressed by Proposed Action	Already Protected to 0.2 percent Flood Level (describe protections)
		1 percent Event	0.2 percent Event		
Rockland Print Co Dam	Dam	Yes	Yes	2024-WestHaverstrawV-02	-
Rockland Print Co Dam #2	Dam	Yes	Yes	2024-WestHaverstrawV-02	-
Garnerville Holding Co Well	Well	Yes	Yes	2024-WestHaverstrawV-03	-

Source: Rockland County 2023, FEMA

Identified Issues

After review of the Village of Haverstraw’s hazard event history, hazard rankings, hazard location, and current capabilities, the Village of West Haverstraw identified the following vulnerabilities within their community:

- The municipality lacks a Substantial Damage Management Plan.
- There are multiple dams, which are critical infrastructures, located in the 1- and 0.2-percent flood hazard areas. These structures have the potential to impact residential areas within or adjacent to these areas.
- There are critical facilities, including the Garnerville Holding Co Well, located in the floodplain and that are exposed to potential flood impacts.
- The Village of West Haverstraw is presently subject to flooding in areas adjacent to Minisceongo Creek, especially in the vicinity of Suffern Lane, Railroad Avenue, Grassy Point Road and east of Samsondale Avenue.
- Though the Village does not have any repetitive or severe repetitive loss properties, there are 23 active NFIP policies and a reported 29 losses. Repetitively flooded properties place an undue stress on the property owner and village and efforts should be made to mitigate them.

- The current comprehensive plan does not thoroughly incorporate natural disaster mitigation considerations.
- The village website needs to be updated to create a webpage for public education on hazard risks and awareness.
- High risk locations often lack or have limited connectivity to real-time disaster warning and emergency notifications.
- The Village would like to increase institutional understanding and programmatic consideration of hazard mitigation.
- Village currently does not have an Emergency Operations Coordinated Response Plan.
- Staff is inadequately trained with respect to natural hazard risk management, climate change and its impact on water levels.
- During a severe storm, Village Hall and the DPW garage are primary response centers. If access is compromised, village residents are at risk.

9.24.7 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and prioritizes actions to address over the next five years.

Past Mitigation Initiative Status

Additional Mitigation Efforts

In addition to the mitigation initiatives completed in [Error! Not a valid bookmark self-reference.](#), Village of West Haverstraw did not identify any mitigation efforts completed since the last HMP.

Table 9.24-17 indicates progress on the Village’s mitigation strategy identified in the 2019 HMP. Actions that are still recommended but not completed or that are in progress are carried forward and combined with new actions as part of the mitigation strategy for this plan update. Previous actions that are now ongoing programs and capabilities are indicated as such and are presented in the capability assessment earlier in this annex.

Additional Mitigation Efforts

In addition to the mitigation initiatives completed in [Error! Not a valid bookmark self-reference.](#), Village of West Haverstraw did not identify any mitigation efforts completed since the last HMP.

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Table 9.24-17. Status of Previous Mitigation Actions

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
VWH-1	Minisceongo Flood Remediation	Flood, Severe Storm	Rockland County Drainage Agency, Village of Haverstraw, and West Haverstraw	The Village of West Haverstraw is presently subject to flooding in areas adjacent to Minisceongo Creek, especially in the vicinity of Suffern Lane, Railroad Avenue, Grassy Point Road and east of Samsondale Avenue. Work with partnering agencies to identify feasible mitigation measures to provide relief from flooding impacts caused by the Minisceongo Creek.	1. No Progress 2. N/A	1. Include in the 2024 HMP 2. Okay as is. 3. N/A
VWH-2	Update Comprehensive Plan	All Hazards	CPG member; Village Trustee	Current comprehensive plan does not thoroughly incorporate natural disaster mitigation considerations. Update Village comprehensive plan. Ensure that local comprehensive plans incorporate natural disaster mitigation techniques through a courtesy review or draft plans by the County Planning Department.	1. No Progress 2. N/A	1. Include in the 2024 HMP 2. Okay as is. 3. N/A
VWH-3	Develop New Village Website	All Hazards	RCOFES lead with direct participation and involvement from each jurisdiction's CPG member	Need for a village website that is current and linked to available resources. Develop new Village website. Include relevant links to expand and disseminate GIS and other hazard information on the internet. Public awareness program on hazards, prevention and mitigation best achieved through regular and routine interaction with residents and businesses. This is best achieved through a response website.	1. No Progress 2. N/A	1. Include in the 2024 HMP 2. The village website needs to be updated to create a webpage for public education on hazard risks and awareness. 3. N/A

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
VWH-4	Develop Emergency Notification System Parameters	All Hazards	Rockland County, CPG member; Village Trustee	<p>High risk locations often lack or have limited connectivity to real-time disaster warning and emergency notifications.</p> <p>Work with local municipalities to pursue the development of an Emergency Notification System call parameter for high-risk locations of natural hazards with delineable hazard areas.</p>	<p>1. No Progress 2. N/A</p>	<p>1. Include in the 2024 HMP 2. Okay as is. 3. N/A</p>
VWH-5	Public Workshops	All Hazards	CPG member; Village Trustee	<p>Increase institutional understanding and programmatic consideration of hazard mitigation.</p> <p>Hold periodic workshops regarding zoning and planning issues that arise regarding natural hazards and hazard mitigation.</p>	<p>1. No Progress 2. N/A</p>	<p>1. Include in the 2024 HMP 2. Okay as is. 3. N/A</p>
VWH-6	Mitigation Initiative Assistance	Flood, Severe Storm	Floodplain manager, Building Department	<p>Repetitively flooded properties place an undue stress on the property owner and village and efforts should be made to mitigate them.</p> <p>Work with owners to explore mitigation opportunities for repetitively flooded properties, and if appropriate and feasible, carry out acquisition, relocation, elevation, and flood proofing measures to protect these properties.</p>	<p>1. No Progress 2. N/A</p>	<p>1. Include in the 2024 HMP 2. Okay as is. 3. N/A</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
VWH-7	Critical Facilities Protection	All Hazards	Building Department	<p>Critical facilities may be vulnerable to hazards and need support to implement protection measures.</p> <p>Determine the year built and level of protection for critical emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide some degree of protection from natural hazards and pursue potential mitigation opportunities to protect these sites as funding becomes available.</p>	<p>1. Ongoing Capability 2. This is an ongoing capability and the Village performs outreach to the appropriate critical facility owners/operations as needed.</p>	<p>1. Include in the 2024 HMP 2. N/A 3. There are critical facilities in the Village that are located in the flood hazard areas. Refer to mitigation actions 02 and 03 below for details.</p>
VWH-8	Develop Emergency Response Plan	All Hazards	Village of West Haverstraw, Rockland County	<p>Village currently does not have an Emergency Response Plan.</p> <p>Develop an Emergency Response Plan for the Village with assistance from Rockland County.</p>	<p>1. No Progress 2. N/A</p>	<p>1. Include in the 2024 HMP 2. Okay as is. 3. N/A</p>
VWH-9	Staff Training	All Hazards	Village of West Haverstraw, Rockland County	<p>Staff is inadequately trained.</p> <p>Provide training and/or certification for Village staff with respect to natural hazard risk management, climate change and its impact on water levels.</p>	<p>1. No Progress 2. N/A</p>	<p>1. Include in the 2024 HMP 2. Staff is inadequately trained with respect to natural hazard risk management, climate change and its impact on water levels. 3. N/A</p>
VWH-10	West Haverstraw Municipal Complex Drainage Improvements	Severe Storm	Village of West Haverstraw	<p>During a severe storm, Village Hall and the DPW garage are primary response centers. If access is compromised, village residents are at risk.</p> <p>Installation of ancillary drainage at the West Haverstraw Municipal Complex.</p>	<p>1. No Progress 2. N/A</p>	<p>1. Include in the 2024 HMP 2. Okay as is. 3. N/A</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
VWH-11	Privately Owned Critical Facility in Floodplain	Flood	Private property with support from the Village of West Haverstraw	<p>A critical facility and located in the floodplain and identified as potentially vulnerable to future flood events. Critical facilities located in the floodplain are not only susceptible to flood damage but also create unnecessary complications for the municipality during an emergency event and post-disaster recovery.</p> <p>The Village will notify the Garnerville Holding Co Well facility manager/operator regarding their facility's flood vulnerability identified during the Rockland County HMP update, potential mitigation alternatives to consider and potential funding sources for implementation. The Village does not have jurisdiction over these facilities to mitigate. The Village will also indicate NYS requires mitigation address the 500-year flood event or "worst damage scenario".</p>	<p>1. No Progress 2. N/A</p>	<p>1. Include in the 2024 HMP 2. Okay as is. 3. N/A</p>

Proposed Hazard Mitigation Initiatives for the HMP Update

West Haverstraw participated in the mitigation strategy workshop for this HMP to identify appropriate actions to include in a local hazard mitigation strategy. Its comprehensive consideration of all possible activities to address hazards of concern included review of the following FEMA documents:

- FEMA 551 “Selecting Appropriate Mitigation Measures for Floodprone Structures” (March 2007)
- FEMA “Mitigation Ideas—A Resource for Reducing Risk to Natural Hazards” (January 2013).

The action worksheets included at the end of this annex list the mitigation actions that West Haverstraw would like to pursue in the future to reduce the effects of hazards. The actions are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in the Village’s priorities.

Table 9.24-18 indicates the range of proposed mitigation action categories. The four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table to further demonstrate the wide range of activities and mitigation measures selected.

Volume I identifies 14 evaluation criteria for prioritizing the mitigation actions. To assist with rating each mitigation action as high, medium, or low priority, a numeric rank is assigned (-1, 0, or 1) for each of the evaluation criteria. Table 9.24-19 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Table 9.24-18. Analysis of Mitigation Actions by Hazard and Category

Hazard	Actions That Address the Hazard, by Action Category									
	FEMA				CRS					
	LPR	SIP	NSP	EAP	PR	PP	PI	NR	SP	ES
Dam Failure	4	-	-	4	4	-	4	-	-	2
Disease Outbreak	1	-	-	3	1	-	3	-	-	1
Drought	2	-	-	4	2	-	4	-	-	2
Earthquake	2	-	-	4	2	-	4	-	-	2
Extreme Temperature	2	-	-	4	2	-	4	-	-	2
Flood	3	4	-	4	3	-	4	-	4	2
Landslide	3	-	-	4	3	-	4	-	-	2
Severe Weather	3	1	-	4	3	-	4	-	1	2
Severe Winter Weather	3	-	-	4	3	-	4	-	-	2
Wildfire	3	-	-	4	3	-	4	-	-	2

Local Plans and Regulations (LPR)—These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.

Structure and Infrastructure Project (SIP)—These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct structures to reduce the impact of hazards.

Natural Systems Protection (NSP)—These are actions that minimize damage and losses and preserve or restore the functions of natural systems.

Education and Awareness Programs (EAP)—These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities

Preventative Measures (PR)—Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.

Property Protection (PP)—These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.

Public Information (PI)—Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.

Natural Resource Protection (NR)—Actions that minimize hazard loss and preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.

Structural Flood Control Projects (SP)—Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.

Emergency Services (ES)—Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities

Table 9.24-19. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Other Community Objectives	Total	High / Medium / Low
2024-WestHaverstrawV-01	Substantial Damage Management Plan	0	1	1	1	1	1	0	1	1	1	1	1	1	0	11	High
2024-WestHaverstrawV-02	Dam Owner Partnership	1	1	1	1	1	1	0	1	1	0	1	1	1	0	11	High
2024-WestHaverstrawV-03	Privately Owned Critical Facility in Floodplain	0	1	1	1	1	0	0	0	1	0	1	1	1	0	8	Medium
2024-WestHaverstraw-04	Minisceongo Flood Remediation	1	1	1	1	1	0	1	1	1	0	1	1	0	1	11	High
2024-WestHaverstrawV-05	Repetitive and Severe Repetitive Loss Properties	1	1	1	1	1	0	1	1	1	1	1	1	0	1	12	High
2024-WestHaverstrawV-06	Update Comprehensive Plan	1	1	1	1	1	1	0	1	1	1	0	1	0	1	11	High
2024-WestHaverstrawV-07	Develop New Village Website	1	1	1	1	1	1	0	1	1	1	1	1	0	1	12	High
2024-WestHaverstrawV-08	Develop Emergency Notification System Parameters	1	1	1	1	1	1	0	1	1	1	1	1	0	1	12	High
2024-WestHaverstrawV-09	Public Workshops	1	1	1	1	1	1	0	1	1	1	1	1	0	1	12	High
2024-WestHaverstrawV-10	Develop Emergency Response Plan	1	1	1	1	1	1	0	1	1	1	0	1	0	1	11	High
2024-WestHaverstrawV-11	Staff Training	1	1	1	1	1	1	0	1	1	1	1	1	0	1	12	High
2024-WestHaverstrawV-12	West Haverstraw Municipal Complex Drainage Improvements	1	1	1	1	1	0	1	1	1	1	1	1	1	1	13	High

Note: Volume I, Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14).

Action 2024-WestHaverstrawV-01. Substantial Damage Management Plan

Action Name:	Substantial Damage Management Plan	
Description of the Problem:	<p>Structures can be damaged by flooding caused by dam failures, intense precipitation and storms, snowmelt, wildfires, earthquakes, landslides, droughts, and extreme temperatures. If damages amount to at least 50 percent of the structure’s pre-damage value, local officials have the opportunity to reduce future impacts from hazards by requiring these structures to meet stronger codes and regulations.</p> <p>Officials in NFIP-participating communities are responsible for regulating all development in SFHAs by issuing permits and enforcing local floodplain requirements, including Substantial Damage, for the repairs of damaged buildings. After any disaster event, they must:</p> <ul style="list-style-type: none"> • Determine where the damage occurred within the community and if the damaged structures are in an SFHA. • Determine what to use for “market value” and cost to repair; uniformly applying regulations will protect against liability and promote equitable administration. • Determine if repairing plus improving the damaged structure equals or exceeds 50 percent of the structure’s pre-damage value. • Require permits for floodplain development. <p>The Village does not have a Substantial Damage Management Plan in place, nor do they have a formal process in place when conducting substantial damage determinations.</p>	
Hazard(s) of Concern:	<input checked="" type="checkbox"/> Dam Failure <input type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	<p>The Village needs a formal process and plan to provide a framework for conducting such inspections and determinations. This plan will outline responsibilities for Substantial Damage determinations, determining market value, and permit approval processes following a disaster event.</p> <p>The Village will develop a Substantial Damage Management Plan, following the six-step planning process in 2021 Developing a Substantial Damage Management Plan (https://crsresources.org/files/500/developing_subst_damage_mgmt_plan.pdf).</p>	
Lead Agency:	Floodplain Administrator	
Supporting Agencies:	Public Works, OEM, Building Department, Engineering	
Estimated Cost:	Low	
Potential Funding Sources:	Village budget	
Implementation Timeline:	Within 5 years to develop the plan; ongoing to maintain and update the plan	
Goals Met:	2, 5, 7	
Benefits:	A Substantial Damage Management Plan will provide an opportunity for the municipality to reduce the potential impacts of future hazard events by implementing stronger, more resilient development codes and regulations.	
Mitigation Action Type:	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category:	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Substantially damaged structures are required to be rebuilt to be compliance with current codes. Socially vulnerable populations may not have the financial means to make these improvements. This action may allow for the identification of potential resources to address substantial damages to structures owned by socially vulnerable populations.	

Impact on Critical Facilities/Lifelines:	A Substantial Damage Management Plan would include all critical facilities and lifelines in the municipality.		
Impact on Capabilities	This action improves disaster recovery capabilities.		
Impact on Future Development:	A Substantial Damage Management Plan would include all existing, current, and future development in the municipality.		
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate-related disaster events. This action provides additional planning for disaster recovery.		
Priority:	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No Action		No change
	Rely on state or federal resources following disaster events		Resources may not be available during major widespread events
	Establish MOUs with outside agencies to conduct Substantial Damage Determinations		A plan outlining responsibilities is still necessary to prevent missing important requirements

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Action 2024-WestHaverstrawV-02. Dam Owner Partnership

Action Name:	Dam Owner Partnership	
Description of the Problem:	There are multiple dams, which are critical facilities, located in the 1- and 0.2-percent flood hazard areas that contain or are adjacent to existing residential areas. The municipality does not own all the dams in its jurisdictions and cannot itself implement mitigation actions to the structures.	
Hazard(s) of Concern:	<input checked="" type="checkbox"/> Dam Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	Work with the owners of the dams to ensure inspections and safety procedures are up to date. Work with the owners to identify mitigation actions to ensure the integrity of the dams and that it is protected up to the 0.2-percent flood hazard area.	
Lead Agency:	Village of West Haverstraw	
Supporting Agencies:	Dam Owners, NYSDEC	
Estimated Cost:	Low	
Potential Funding Sources:	Village Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 3, 5	
Benefits:	This action will improve the safety and security of those who live within the dam inundation areas of the dams and increase the resilience of responding agencies. It will also increase communication between the municipality and the dam owners, which can be important during hazard events or other emergencies.	
Mitigation Action Type:	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category:	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	The action will result in better preparedness within the Special Flood Hazard Area and inundation areas where significant risk to socially vulnerable populations exist.	
Impact on Critical Facilities/Lifelines:	Dams are considered a critical facility. This action will create an understanding of the safety procedures in place for each identified dam.	
Impact on Capabilities	This action will improve planning and response capabilities through the understanding of responsibilities and procedures.	
Impact on Future Development:	Depending on the result of this partnership, future development near the dams may be provided with better protection from dam failure events due to improved procedures and communication, as well as any physical improvements to the structures.	
Climate Change Considerations:	Climate change may result in an increase in the frequency and severity of weather-related disaster events, which may contribute to the likelihood of a dam failure event. This action will increase the capabilities to respond to these events.	
Priority:	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium
Alternatives	Action	
	Evaluation	
	No Action	Village will be unaware of any safety concerns for the dam or its condition
	Utilize information from NYSDEC	Owners may not be required to submit a safety plan to the State
Utilize information from the National Inventory of Dams	Not all dams are listed on the inventory	

Action 2024-WestHaverstrawV-03. Privately Owned Critical Facility in Floodplain

Action Name:	Privately Owned Critical Facility in Floodplain	
Description of the Problem:	The Village has critical facilities, such as the Garnerville Holding Co Well, located in the floodplain. These facilities are exposed to flood events and may be vulnerable to damage, service interruptions, or other adverse impacts during or following a flood. The municipality does not own all the facilities in its jurisdictions and cannot itself implement mitigation actions to the structures.	
Hazard(s) of Concern:	<input type="checkbox"/> Dam Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	Coordinate with the facility managers at Garnerville Holding Co Well in the Village to support the mitigation of vulnerable structures via retrofit (e.g. elevation, flood-proofing) or relocation to protect structures from future damage. Phase 1: Identify most cost-effective mitigation option. Phase 2: Work with facility manager to implement selected action based on available funding and local match ability.	
Lead Agency:	Village of West Haverstraw	
Supporting Agencies:	Facility Managers	
Estimated Cost:	High	
Potential Funding Sources:	FEMA BRIC, HMGP, Village Budget	
Implementation Timeline:	5 years	
Goals Met:	1, 2, 3	
Benefits:	This action will remove or reduce critical facility and community lifeline vulnerability to the flood hazard and remove or reduce safety risks for first responders.	
Mitigation Action Type:	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category:	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Retrofitting or relocating the identified structures will benefit socially vulnerable populations, as individuals within these populations rely on resources from various government facilities, transportation facilities, and medical and senior care facilities.	
Impact on Critical Facilities/Lifelines:	Noting the number of facilities located within the flood hazard area may encourage the consideration of relocating critical facilities and lifelines from the flood hazard area and deter the development of any additional facilities in the flood hazard area.	
Impact on Capabilities	This action will enhance the Village’s current NFIP capabilities.	
Impact on Future Development:	Noting the number of facilities located within the flood hazard area may encourage the consideration of relocating critical facilities and lifelines from the flood hazard area and deter the development of any additional facilities in the flood hazard area.	
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events. As sea level rises due to climate change, the area of the flood hazard may expand.	
Priority:	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium
		<input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No action	Current problem continues
	Floodproof existing structures	May not necessarily reduce risk

	Construct floodwalls to stop flood issues	Will most likely interrupt natural floodplain function
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Action 2024-WestHaverstrawV-04. Minisceongo Flood Remediation

Action Name:	Minisceongo Flood Remediation	
Description of the Problem:	The Village of West Haverstraw is presently subject to flooding in areas adjacent to Minisceongo Creek, especially in the vicinity of Suffern Lane, Railroad Avenue, Grassy Point Road and east of Samsondale Avenue.	
Hazard(s) of Concern:	<input type="checkbox"/> Dam Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	Work with partnering agencies to identify feasible mitigation measures to provide relief from flooding impacts caused by the Minisceongo Creek. Once identified, the Village will work with the County and other agencies to implement projects to reduce or eliminate flood impacts along the Creek.	
Lead Agency:	Village of West Haverstraw DPW	
Supporting Agencies:	Rockland County Drainage Agency	
Estimated Cost:	High	
Potential Funding Sources:	FEMA BRIC, HMGP	
Implementation Timeline:	5 years	
Goals Met:	1, 2, 5	
Benefits:	This action would reduce the flooding impacts felt by the Village from the Minisceongo Creek.	
Mitigation Action Type:	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category:	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	This action will assist socially vulnerable populations whose properties are impacted by flooding from the Minisceongo Creek. Furthermore, this action will assist in keeping roadways clear of flood waters for the populations which may need to attend medical appointments or require medical attention from first responders.	
Impact on Critical Facilities/Lifelines:	This action would assist in the reduction of roadway flooding from the Minisceongo Creek, permitting first responders to traverse the roadways safely.	
Impact on Capabilities	Not applicable	
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.	
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events.	
Priority:	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No action	Current problem remains
	Raise banks of creek to increase storage capacity	Cost prohibitive
	Construct floodwall along creek	Cost prohibitive

Action 2024-WestHaverstrawV-05. Repetitive and Severe Repetitive Loss Properties

Action Name:	Repetitive and Severe Repetitive Loss Properties	
Description of the Problem:	The Village does not have any repetitive or severe repetitive loss properties, but there are 23 active NFIP policies and a reported 29 losses. These properties may face increasing risks to flood damage due to changes in precipitation intensity and frequency, raising the possibility for these properties to become Repetitive/Severe Repetitive Loss Properties. These properties may require a disproportionate amount of municipal resources after hazard events if they are damaged.	
Hazard(s) of Concern:	<input type="checkbox"/> Dam Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Village will promote and support non-structural flood hazard mitigation alternatives for at-risk properties within the floodplain, including those that have been identified as Repetitive Loss (RL) and Severe Repetitive Loss (SRL), such as acquisition/relocation or elevation depending on feasibility. The parameters for this initiative would be funding, benefits versus cost, and willing participation of property owners.	
Lead Agency:	Floodplain Administrator	
Supporting Agencies:	Rockland County	
Estimated Cost:	Medium	
Potential Funding Sources:	FEMA FMA, FMA SWIFT, NJDEP Green Acres, NJDEP Blue Acres, Municipal Budget	
Implementation Timeline:	3 years	
Goals Met:	1, 2, 3	
Benefits:	This action would foster comprehensive floodplain management by removing at risk properties from the flood hazard area or elevating properties to reduce the flood risk.	
Mitigation Action Type:	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category:	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Socially vulnerable populations may be able to have houses elevated or acquired when it would otherwise be unaffordable.	
Impact on Critical Facilities/Lifelines:	Removing structures from the floodplain decreases the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.	
Impact on Capabilities	This action will enhance the Village’s current NFIP capabilities.	
Impact on Future Development:	Increased outreach to homeowners within a flood prone area will limit construction in areas that are prone to hazard events. Homes may be acquired, which will remove those structures from the floodplain and prevent future development on those sites.	
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events.	
Priority:	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No action	Current problem continues
	Construct flood walls/barriers around vulnerable areas	Costly and can divert floodwaters to other areas
	Deployable flood barriers for vulnerable areas	Requires a great deal of work to implement prior to each event

Action 2024-WestHaverstrawV-06. Update Comprehensive Plan

Action Name:	Update Comprehensive Plan		
Description of the Problem:	The current comprehensive plan does not thoroughly incorporate natural disaster mitigation considerations, such as dam/levee areas, flood zones (these are also impacted by severe storms and severe winter storms) and high landslide and wildfire susceptibility areas.		
Hazard(s) of Concern:	<input checked="" type="checkbox"/> Dam Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire	
Description of the Solution:	Update Village comprehensive plan. Ensure that local comprehensive plans incorporate natural disaster mitigation techniques through a courtesy review or draft plans by the County Planning Department.		
Lead Agency:	Village of West Haverstraw Planning and Zoning Board		
Supporting Agencies:	Planning Board, Rockland County		
Estimated Cost:	Staff time, Low		
Potential Funding Sources:	Village Budget		
Implementation Timeline:	Within 5 years		
Goals Met:	1, 2, 5, 6, 7		
Benefits:	This action will have the Village update its comprehensive plan, which has not been updated in many years. The integration of hazard mitigation principles will present the opportunity for the Village to identify areas of the Village which may be impacted by hazards and plan for future land use accordingly.		
Mitigation Action Type:	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category:	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	The inclusion of hazard mitigation principles into the comprehensive plan may include discussions on how hazard risks may impact socially vulnerable populations in the Village.		
Impact on Critical Facilities/Lifelines:	Updating the comprehensive plan to include hazard mitigation principles may present an opportunity to discuss hazard risks to critical facilities and lifelines in the Village.		
Impact on Capabilities	This action will update an already existing planning capability of the Village, making it more resilient.		
Impact on Future Development:	This action will have a direct impact on future land use in the Village, as the comprehensive plan guides land use principles in the Village.		
Climate Change Considerations:	As impacts from climate change are increasingly felt, the contents in the Village’s comprehensive plan will need to be updated.		
Priority:	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem remains
	Integrate hazard mitigation principles in only plan elements		The plan will miss integration opportunities in the comprehensive plan main document
	Integrate hazard mitigation principles in only comprehensive plan main document		The plan will miss integration opportunities in the plan elements

Action 2024-WestHaverstrawV-07. Develop New Village Webpage

Action Name:	Develop New Village Website	
Description of the Problem:	During hazard events, the public may need to quickly access information about evacuation routes and shelters, or other steps they can take to protect themselves and their property. Residents may also need information about what services are available or offline due to flooding from intense precipitation, dam failure, severe storms, and snow melt; where to receive a vaccination or other healthcare in the event of a disease outbreak; public cooling or heat centers, such as libraries, during extreme temperatures; and evacuation areas for earthquakes, landslides, and wildfires. The Village’s website does not currently have information available on hazard risks and awareness.	
Hazard(s) of Concern:	<input checked="" type="checkbox"/> Dam Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	The Village will select a website developer to update the Village’s website. The update will include relevant links to expand and disseminate GIS and other hazard-related information, public awareness programs on natural hazards. With this information readily available to the public, it will increase overall preparedness and understanding of hazards. The Village will include updates on mitigation projects, a link to the current HMP, and upcoming public events.	
Lead Agency:	Village of West Haverstraw	
Supporting Agencies:	-	
Estimated Cost:	Low	
Potential Funding Sources:	Village Budget	
Implementation Timeline:	1 year	
Goals Met:	3, 5	
Benefits:	This action will improve the current public education and outreach program in the Village by including discussions on disaster preparedness and hazard mitigation to residents and business owners, which will contribute to the resiliency of the Village.	
Mitigation Action Type:	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category:	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Socially vulnerable populations will learn how to prepare for and mitigate the various hazards which may impact them in the Village.	
Impact on Critical Facilities/Lifelines:	Businesses, which may be considered critical facilities or lifelines, would be more informed on how to prepare for emergency events and mitigate the risks of potential hazards. With these businesses becoming more resilient, this action would contribute to their continuity of operations.	
Impact on Capabilities	This action would build upon the Village’s already existing public education and outreach program.	
Impact on Future Development:	Not applicable	
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate-related disaster events. This action will inform residents and business owners of how to reduce risk from hazards and how climate change may exacerbate those risks.	
Priority:	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No action	Current methods remain the only ones used

	Rely on state or federal resources	Resources may be generalized and not specific to the risks in the Village
	Use only a few methods for distribution	Using only a few methods of distribution may hinder socially vulnerable populations from receiving the guidance

Action 2024-WestHaverstrawV-08. Develop Emergency Notification System Parameters

Action Name:	Develop Emergency Notification System Parameters					
Description of the Problem:	High-risk locations often lack or have limited connectivity to real-time disaster warning and emergency notifications that may protect residents by identifying evacuation routes, shelters, health care or food/water distribution sites, and other resources during a hazard event involved a dam failure, disease outbreak, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, or wildfire.					
Hazard(s) of Concern:	<input checked="" type="checkbox"/> Dam Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire				
Description of the Solution:	Coordinate with Rockland County Department of Fire & Emergency Services to establish emergency notification parameters for delineated hazard areas and to ensure the Village and its residents are aware of the various mass notification systems in place. The Village will provide public outreach materials with how residents can sign up and utilize these systems. In addition, the Village will work with the County to develop notification parameters specifically for residents living in high-risk areas (e.g., flood hazard areas).					
Lead Agency:	Village of West Haverstraw Fire Department and Village Board of Trustees					
Supporting Agencies:	Rockland County Emergency Services					
Estimated Cost:	Medium					
Potential Funding Sources:	Village Budget, County Budget					
Implementation Timeline:	Within 5 years					
Goals Met:	1, 2, 3, 5					
Benefits:	This action will inform residents of impending and/or current emergencies.					
Mitigation Action Type:	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)				
CRS Category:	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)				
Impact on Socially Vulnerable Populations:	This action will keep socially vulnerable populations informed if an emergency is declared or inevitable.					
Impact on Critical Facilities/Lifelines:	This action will strengthen the safety and security lifeline by keeping residents informed of potential hazard risks and emergencies.					
Impact on Capabilities	This action will strengthen the Village’s and the County’s safety and security capabilities.					
Impact on Future Development:	This action will ensure potential areas for future development are within the range of receiving emergency notifications.					
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate-related disaster events. This action will inform residents of impending and/or current emergencies.					
Priority:	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium <input type="checkbox"/> Low				
Alternatives	<table border="1"> <tr> <th>Action</th> <th>Evaluation</th> </tr> <tr> <td>No action</td> <td>Current problem continues</td> </tr> </table>	Action	Evaluation	No action	Current problem continues	
Action	Evaluation					
No action	Current problem continues					

	Deploy mobile signs in hazard areas during hazard events	Ineffective
	Door-to-door campaigns during disasters	Not feasible; requires staff which takes away from their responsibilities during a disaster

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Action 2024-WestHaverstrawV-09. Public Workshops

Action Name:	Public Workshops	
Description of the Problem:	Effective hazard mitigation requires a comprehensive approach that leverages land use, zoning, and development/building codes. It is unclear to what degree the Village’s planning/zoning staff and boards and building employees are trained to integrate hazard mitigation principles into their everyday work to mitigate the potential adverse impacts of dam failure, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, and/or wildfire events.	
Hazard(s) of Concern:	<input checked="" type="checkbox"/> Dam Failure <input type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	Hold periodic public workshops regarding zoning and planning issues that arise regarding natural hazards and hazard mitigation. The workshops will include information on how zoning and planning can be used to protect conservation and promote climate resilience. Village Planning and Zoning Board will explain current and future zoning and planning practices and procedures.	
Lead Agency:	Planning and Zoning Board, Building Department	
Supporting Agencies:	Village Trustee	
Estimated Cost:	Low	
Potential Funding Sources:	Municipal Budget	
Implementation Timeline:	1 year	
Goals Met:	1, 3, 5	
Benefits:	This action will improve the current public understanding of hazard mitigation when it comes to planning and zoning issues.	
Mitigation Action Type:	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category:	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Individuals who may not be aware of the zoning and planning issues that arise regarding natural hazards and hazard mitigation will become informed.	
Impact on Critical Facilities/Lifelines:	Not applicable	
Impact on Capabilities	This action will strengthen the Village’s education and outreach capabilities by informing individuals of how hazard mitigation principles are integrated into zoning and planning.	
Impact on Future Development:	This action will educate the public on why the planning and zoning boards reject applications in terms of its impacts on the natural environment and potential hazard risks and why development cannot occur in certain areas.	
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate-related disaster events. This action will inform residents and business owners of how to reduce risk from hazards and how climate change may exacerbate those risks.	
Priority:	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No action	Current problem remains
	Hold a single workshop	Does not present many opportunities for education
	Restrict attendance to board members only	Village residents may submit problematic applications

Action 2024-WestHaverstrawV-10. Develop Emergency Response Plan

Action Name:	Develop Emergency Response Plan		
Description of the Problem:	Village currently does not have an Emergency Operations Plan that outlines what the Village will do during any of the following events: dam failure, disease outbreak, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, and wildfire.		
Hazard(s) of Concern:	<input checked="" type="checkbox"/> Dam Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire	
Description of the Solution:	Develop an Emergency Operations Plan for the Village with assistance from Rockland County. The Emergency Operations Plan (EOP) details what the Village will do during a disaster (incident command implementation, command center location and activities, specific plans by department, etc.).		
Lead Agency:	Village of West Haverstraw		
Supporting Agencies:	Rockland County		
Estimated Cost:	Staff time, Low		
Potential Funding Sources:	Municipal Budget		
Implementation Timeline:	1 year		
Goals Met:	1, 2, 3, 5, 7		
Benefits:	Developing the EOP will permit the Village to integrate new plans, policies, capabilities, and hazard assessments.		
Mitigation Action Type:	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category:	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	The section overview portion of the EOP covers a discussion of a variety of topics, including population distribution and locations, including any concentrated populations of individuals with disabilities, others with access and functional needs, or individuals with limited English proficiency.		
Impact on Critical Facilities/Lifelines:	The section overview portion of the EOP covers a discussion of a variety of topics, including vulnerable critical facilities (e.g. nursing homes, schools, hospitals, infrastructure).		
Impact on Capabilities:	This action will create a planning capability for the Village.		
Impact on Future Development:	Future development will be protected by the EOP.		
Climate Change Considerations:	As impacts from climate change are increasingly felt, the contents in an EOP, including in the basic plan and any annexes, may need to be updated.		
Priority:	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives:	Action		Evaluation
	No action		Current problem remains
	Integrate hazard mitigation principles in only hazard appendices		The plan will miss integration opportunities in the basic plan and annexes

Action 2024-WestHaverstrawV-11. Staff Training

Action Name:	Staff Training	
Description of the Problem:	Staff is inadequately trained with respect to natural hazard risk management, climate change and projected impacts caused by dam failure, disease outbreak, drought, earthquake, extreme temperature, flood, landslide, severe storm, severe winter storm, and wildfire.	
Hazard(s) of Concern:	<input checked="" type="checkbox"/> Dam Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	Provide training and/or certification for Village staff with respect to natural hazard risk management, climate change and its projected impacts. This can include, but not be limited to, FEMA’s Hazard Risk Management course, FEMA’s mitigation planning training, and NYSERDA’s Clean Energy Communities course.	
Lead Agency:	Village of West Haverstraw	
Supporting Agencies:	Rockland County	
Estimated Cost:	Low	
Potential Funding Sources:	Village Budget, County Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 3	
Benefits:	Educating staff on natural hazard risk management, climate change and its projected impacts increases the resiliency on the Village.	
Mitigation Action Type:	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category:	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	The education of staff on climate change projection impacts and natural hazard risk management may cause the Village to focus on the education and outreach performed to its socially vulnerable populations.	
Impact on Critical Facilities/Lifelines:	The education of staff on climate change projection impacts and natural hazard risk management may influence the Village to take action to mitigate potential risks to critical facilities and lifelines.	
Impact on Capabilities	This action will enhance the Village’s current NFIP capabilities.	
Impact on Future Development:	The education of staff on climate change projection impacts and natural hazard risk management may influence policies to be updated on land use and future development.	
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related disaster events. This action will inform Village staff of how to reduce risk from hazards and how climate change may exacerbate those risks.	
Priority:	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium
		<input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No action	Current problem continues
	Have staff attend courses on natural hazard risk management but not on climate change	Lack of training for future hazard changes
	Do not implement any changes following the trainings	The resiliency of the Village will remain the same

Action 2024-WestHaverstrawV-12. West Haverstraw Municipal Complex Drainage Improvements

Action Name:	West Haverstraw Municipal Complex Drainage Improvements	
Description of the Problem:	During a severe storm, Village Hall and the DPW garage are primary response centers. If access is compromised due to flooding or severe storms, Village residents may be unable to access critical services during hazard events.	
Hazard(s) of Concern:	<input type="checkbox"/> Dam Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	Installation of ancillary drainage at the West Haverstraw Municipal Complex to reduce flooding, road closures, and damages. This will allow for continuity of operations and allow the municipal complex to operate before, during, and after major flooding events.	
Lead Agency:	Village of West Haverstraw DPW	
Supporting Agencies:	-	
Estimated Cost:	High	
Potential Funding Sources:	FEMA BRIC, HMGP, Village Budget	
Implementation Timeline:	5 years	
Goals Met:	1, 2	
Benefits:	Overall flooding will be reduced, which will result in less frequency of road closures and reduced damage occurring to drainage infrastructure and roadways during severe events.	
Mitigation Action Type:	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category:	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Socially vulnerable populations who live in the in the area of the Village Hall and the DPW garage will be positively impacted by this action.	
Impact on Critical Facilities/Lifelines:	This action will identify measures to protect infrastructure in the transportation lifeline, which will lead to the assurance of clear roadways for evacuations, regular travel, and emergency responses.	
Impact on Capabilities	This action will upgrade the stormwater management capabilities of the Village.	
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.	
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events. These periods of intense rainfall may lead to an increased occurrence of flooding conditions.	
Priority:	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium
Alternatives:	<input type="checkbox"/> Low	
	Action	Evaluation
	No Action	Current problem remains
	Elevate structures	Cost prohibitive
	Relocate structures	Cost prohibitive

REFERENCES

SECTION 1 – INTRODUCTION

NYS DHSES. (2022). *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.

SECTION 2 – PLANNING PROCESS

NYS DHSES. (2022). *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.

SECTION 3 – COUNTY PROFILE

Agency for Toxic Substances and Disease Registry. 2022. *CDC/ATSDR Social Vulnerability Index*. October. Accessed 2023. <https://www.atsdr.cdc.gov/placeandhealth/svi/index.html>.

American Community Survey. 2024. *American Community Survey for Rockland County*. Accessed 2024. https://data.census.gov/profile/Rockland_County,_New_York?g=050XX00US36087.

American Red Cross. 2020. *Closing the Gaps: Advancing Disaster Preparedness, Response and Recovery for Older Adults*. January. Accessed 2023. <https://www.redcross.org/content/dam/redcross/training-services/scientific-advisory-council/253901-03%20BRCR-Older%20Adults%20Whitepaper%20FINAL%201.23.2020.pdf>.

CDC. 2020. *Disability Inclusion*. September 16. Accessed September 19, 2023. <https://www.cdc.gov/ncbddd/disabilityandhealth/disability-inclusion.html>.

Cornell University. 2018. *County Projections Explorer*. Accessed September 19, 2023. <https://pad.human.cornell.edu/counties/projections.cfm>.

FEMA. 2024. *Community Lifelines*. February 20. Accessed 2024. <https://www.fema.gov/emergency-managers/practitioners/lifelines>.

—. 2023. *Disaster Declarations for States and Counties*. Accessed September 19, 2023. <https://www.fema.gov/data-visualization/disaster-declarations-states-and-counties>.

—. 2014. *Flood Insurance Study - Rockland County, NY*. March 3. Accessed September 19, 2023. <https://map1.msc.fema.gov/data/36/S/PDF/36087CV001A.pdf?LOC=07245ddfd02ae007fcc0ee4db1be2fbd>.

Hudson River Watershed Alliance. 2021. *What is a watershed?* April 28. Accessed September 19, 2023. <https://hudsonwatershed.org/what-is-a-watershed/>.

- New York State Department of Health. 2023. *Hospitals by Region/County and Service*. Accessed 2023. https://profiles.health.ny.gov/hospital/county_or_region/county:087.
- NYS DHSES. 2022. *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.
- NYSDEC. 2014. *Lake Champlain Watershed*. November 7. Accessed September 19, 2023. <https://www.dec.ny.gov/lands/48369.html>.
- . 2012. *NYS Major Drainage Basins*. October. Accessed September 19, 2023. https://www.dec.ny.gov/docs/water_pdf/drainagebasins.pdf.
- . 2014. *Ramapo River Watershed*. November 7. Accessed September 19, 2023. <https://www.dec.ny.gov/lands/48022.html>.
- NYSDEC. 2024. *Rockland County Data*. Accessed 2024. <https://data.nysed.gov/profile.php?county=50>.
- Rockland County. 2022. *2020-2024 Consolidated Plan*. February 8. Accessed September 19, 2023. https://rocklandgov.com/files/8016/4451/7675/2020_2024_CON_PLAN_FINAL_SUBMISSION_BACK_TO_HUD.pdf.
- Rockland County Department of Public Transportation. 2024. *From Rockland*. Accessed 2024. <https://www.rocklandcountyny.gov/departments/public-transportation/from-rockland>.
- . 2024. *Public Transportation*. Accessed 2024. <https://www.rocklandcountyny.gov/departments/public-transportation>.
- Rockland County Economic Development & Tourism. 2024. *Welcome to Rockland County*. Accessed 2024. <https://explorerocklandny.com/index.php?section=about-rockland-county>.
- Rockland County Fire and Emergency Services. 2024. *Local Fire Departments*. Accessed 2024. <https://www.rocklandcountyny.gov/departments/fire-emergency/information-for-the-public/local-fire-departments>.
- Rockland County Health Department. 2024. *Emergency Medical Services*. Accessed 2024. <https://www.rocklandcountyny.gov/departments/health/emergency-medical-services>.
- Rockland County. 2011. *Rockland County Comprehensive Plan*. March 1. Accessed 2024. <https://www.rocklandcountyny.gov/home/showpublisheddocument/1554/638216350420970000>.
- SLR. 2021. *Flood Mitigation & Resilience Report - Mahwah River*. November. Accessed 2024. https://extapps.dec.ny.gov/docs/water_pdf/mahwahriver.pdf.
- . 2022. *Flood Mitigation & Resilience Report Hackensack River*. February. Accessed 2024. https://extapps.dec.ny.gov/docs/water_pdf/hackensackpt1.pdf.
- U.S. Department of Justice. 2023. *Introduction to the Americans with Disabilities Act*. Accessed 2023. <https://www.ada.gov/topics/intro-to-ada/>.
- . 2016. *Tips and Tools for Reaching Limited English Proficient Communities in Emergency Preparedness, Response, and Recovery*. Accessed 2023. <https://www.justice.gov/crt/file/885391/download>.

- U.S. Environmental Protection Agency. 2023. *Information about Public Water Systems*. November 7. Accessed 2024. <https://www.epa.gov/dwreginfo/information-about-public-water-systems>.
- United for ALICE. 2024. *Research Center - Methodology*. Accessed 2024. <https://www.unitedforalice.org/Methodology>.
- United Way of New York State & United for ALICE. 2023. *ALICE in the Crosscurrents: COVID and Financial Hardship in New York*. <https://www.unitedforalice.org/New-York>.
- US Census Bureau. 2022. *2020 Census Urban-Rural Classification Fact Sheet*. December 29. Accessed September 19, 2023. <https://www.census.gov/content/dam/Census/library/factsheets/2022/dec/2020-census-urban-rural-fact-sheet.pdf>.
- . 2020. *2020 County Business Patterns*. Accessed September 19, 2023. <https://data.census.gov/table?t=Business+and+Economy&g=050XX00US36087>.
- . 2021. *2021 ACS 5-Year Estimates Data Profiles*. Accessed September 19, 2023. https://data.census.gov/table?tid=ACSDP5Y2021.DP04&g=050XX00US36087_040XX00US36.
- . 2021. *New York: 2020 Core Based Statistical Areas and Counties*. May 11. Accessed September 19, 2023. https://www2.census.gov/programs-surveys/metro-micro/reference-maps/2020/state-maps/36_NewYork_2020.pdf.
- . 2020. *New York-Jersey City-White Plains, NY-NJ Metro Division*. Accessed September 19, 2023. <https://www.bing.com/ck/a?!&&p=51ad0c9b8134be4cJmltdHM9MTY5NTA4MTYwMCZpZ3VpZD0zMDY1ZjVINS00NzVhLTY3MzYtMjg5MC1IN2M5NDYyODY2ZGEmaW5zaWQ9NTI1OQ&pfn=3&hsh=3&fclid=3065f5e5-475a-6736-2810-e7c9462866da&psq=New+York%e2%80%93Jersey+City%e2%80%93White+Plains%2c+N>.
- . 2023. *Poverty Thresholds*. July 13. Accessed September 19, 2023. <https://www.census.gov/data/tables/time-series/demo/income-poverty/historical-poverty-thresholds.html>.

SECTION 4.1 – HAZARD OF CONCERN ID

NYS DHSES. (2022). *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.

SECTION 4.2 – METHODOLOGY

NYS DHSES. 2022. *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.

USGS. 2023. *What is a landslide hazard map?* <https://www.usgs.gov/faqs/what-landslide-hazard-map>.

SECTION 4.3.1 – DAM FAILURE

- ASDSO. n.d. *Dam Failures and Incidents*. Association of State Dam Safety Officials. <https://damsafety.org/dam-failures#The%20Causes%20of%20Dam%20Failures>.
- Association of State Dam Safety Officials. 2023. *Dams 101*. <https://damsafety.org/dams101>.
- Cornell University. 2018. *County Projections Explorer*. Accessed December 18, 2023. <https://pad.human.cornell.edu/counties/projections.cfm>.
- County of Rockland. 2021. *2020 Census Data Profile*. Accessed December 18, 2023. https://rocklandgov.com/files/1016/2888/5262/Rockland_County_2020_Data_-_Preliminary_Profile.pdf.
- FEMA. 2016. "Be Aware of Potential Risk of Dam Failure in Your Community." https://www.fema.gov/sites/default/files/2020-08/fema_dam-safety_aware-community_fact-sheet_2016.pdf.
- . 2022. *Dam Safety*. May 16. Accessed August 16, 2023. <https://www.fema.gov/emergency-managers/risk-management/dam-safety>.
- . 2023. *Disaster Declarations for States and Counties*. Accessed 2023. <https://www.fema.gov/data-visualization/disaster-declarations-states-and-counties>.
- . 2023. *Grant Assistance to States*. August 8. Accessed August 16, 2023. <https://www.fema.gov/emergency-managers/risk-management/dam-safety/grants>.
- . 2013. *Living With Dams*. February. Accessed June 13, 2023. https://www.fema.gov/sites/default/files/2020-08/fema_living-with-dams_p-956.pdf.
- . n.d. *National Risk Index*. Federal Emergency Management Agency. Accessed 2023. <https://hazards.fema.gov/nri/map#>.
- FERC. 2020. *Dam Safety Program*. July 10. Accessed August 16, 2023. <https://staging.ferc.gov/industries-data/hydropower/dam-safety-and-inspections/dam-safety-program>.
- n.d. *N.Y. Comp. Codes R. & Regs. Tit. 6 § 673.3 - General provisions*. Accessed 2023. <https://www.law.cornell.edu/regulations/new-york/6-NYCRR-673.3#:~:text=N.Y.%20Comp.%20Codes%20R.%20%26%20Regs.%20Tit.%206,6%20%20C2%A7%20673.3%20-%20General%20provisions%20State%20Regulations>.
- NYS DEC. n.d. "GUIDANCE FOR DAM HAZARD CLASSIFICATION ." Accessed 2023. https://www.dec.ny.gov/docs/water_pdf/togs315.pdf.
- . n.d. *Dam Safety*. Accessed 2023. <https://www.dec.ny.gov/lands/4991.html>.
- NYS DHSES. 2022. *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.
- . n.d. *Dam Safety Preparedness*. <https://www.dhSES.ny.gov/dam-safety-preparedness>.

- NYSDEC. 2014. *Dam Safety*. November 11. Accessed September 14, 2023. <https://www.dec.ny.gov/lands/4991.html>.
- . 2023. *Dam Safety Regulations*. Accessed September 14, 2023. <https://govt.westlaw.com/nycrr/Browse/Home/NewYork/NewYorkCodesRulesandRegulations?guid=I06198200b5a111dda0a4e17826ebc834&originationContext=documenttoc&transitionType=Default&contextData=%28sc.Default%29>.
- NYSERDA. 2014. *Responding to Climate Change in New York State (ClimAID)*. September. Accessed August 4, 2023. <https://www.nyserda.ny.gov/climaid>.
- USACE. 2023. *National Inventory of Dams*. Accessed August 30, 2023. <https://nid.sec.usace.army.mil/#/dams/search/sy=@countyState:Burlington,%20New%20Jersey&viewType=map&resultsType=dams&advanced=false&hideList=false&eventSystem=false>.
- . 2023. *Natonal Inventory of Dams*. Accessed August 16, 2023. <https://nid.sec.usace.army.mil/#/dams/search/sy=@countyState:Dutchess,%20New%20York&viewType=map&resultsType=dams&advanced=false&hideList=false&eventSystem=false>.
- . 2014. *SAFETY OF DAMS – POLICY AND PROCEDURES*. March 13. Accessed August 16, 2023. https://www.publications.usace.army.mil/Portals/76/Users/182/86/2486/ER_1110-2-1156.pdf?ver=2020-01-29-103920-173.
- . 2014. *SAFETY OF DAMS – POLICY AND PROCEDURES*. March 31. Accessed August 30, 2023. https://www.publications.usace.army.mil/Portals/76/Users/182/86/2486/ER_1110-2-1156.pdf?ver=2020-01-29-103920-173.
- USBR. 2003. *Probabilistic Extreme Flood Hydrographs That Use PaleoFlood Data for Dam Safety Applications*. June. Accessed August 4, 2023. <https://www.usbr.gov/ssle/damsafety/TechDev/DSOTechDev/DSO-03-03.pdf>.
- USSD. 2023. Accessed 2023. https://www.usdams.org/glossary_definition/dam-failure/.

SECTION 4.3.2 – DISEASE OUTBREAK

- Baker, R.E., A.S. Mahmud, I.F. Miller, M. Rajeev, F. Rasambainarivo, B.L. Rice, S. Takashi, et al. 2021. "Infectious disease in an era of global change." *Nature Reviews Microbiology*, October 13: 193-205. <https://www.nature.com/articles/s41579-021-00639-z>.
- CDC. 2020. *CDC updates, expands list of people at risk of severe COVID-19 illness*. June 25. Accessed August 25, 2023. <https://www.cdc.gov/media/releases/2020/p0625-update-expands-covid-19.html>.
- . 2021. *COVID-19*. Accessed 2021. <https://www.cdc.gov/coronavirus/2019-ncov/>.
- . n.d. *Diseases Carried by Vectors*. Accessed 2020. <https://www.cdc.gov/climateandhealth/effects/vectors.htm>.
- . 2022. *Lyme Disease*. January 19. Accessed August 5, 2023. <https://www.cdc.gov/lyme/>.
- . 2022. *Lyme disease vaccine*. August 11. Accessed September 5, 2023. <https://www.cdc.gov/lyme/prev/vaccine.html>.

- . 2020. *Mosquitoes in the United States*. March 5. Accessed August 25, 2023. <https://www.cdc.gov/mosquitoes/about/mosquitoes-in-the-us.html>.
- . 2020. *Pandemic Influenza*. May 12. <https://www.cdc.gov/flu/pandemic-resources/index.htm>.
- . 2021. *West Nile Virus*. <https://www.cdc.gov/westnile/index.html>.
- . 2013. *West Nile Virus in the United States*. June 14. Accessed 2021. <https://www.cdc.gov/westnile/resources/pdfs/wnvguidelines.pdf>.
- CISA. n.d. *Critical Infrastructure Sectors*. Accessed August 25, 2023. <https://www.cisa.gov/topics/critical-infrastructure-security-and-resilience/critical-infrastructure-sectors>.
- Columbia University. 2021. *Epidemic, Endemic, Pandemic: What are the Differences?* February 19. Accessed August 5, 2023. <https://www.publichealth.columbia.edu/news/epidemic-endemic-pandemic-what-are-differences>.
- Cornell University. 2018. *County Projections Explorer*. Accessed December 18, 2023. <https://pad.human.cornell.edu/counties/projections.cfm>.
- County of Rockland. 2021. *2020 Census Data Profile*. Accessed December 18, 2023. https://rocklandgov.com/files/1016/2888/5262/Rockland_County_2020_Data_-_Preliminary_Profile.pdf.
- FEMA. 2023. *Disaster Declarations for States and Counties*. Accessed 2023. <https://www.fema.gov/data-visualization/disaster-declarations-states-and-counties>.
- . n.d. *National Risk Index*. Federal Emergency Management Agency. Accessed 2023. <https://hazards.fema.gov/nri/map#>.
- Harmon. 2010. *Climate change will impact infectious diseases worldwide, but questions remain as to how*. Accessed 2021. <https://blogs.scientificamerican.com/observations/climate-change-will-impact-infectious-diseases-worldwide-but-questions-remain-as-to-how/>.
- Homeland Security Council. 2006. *National Strategy for Pandemic Influenza: Implementation Plan*. May. Accessed August 25, 2023. <https://www.cdc.gov/flu/pandemic-resources/pdf/pandemic-influenza-implementation.pdf>.
- John Hopkins University. 2022. *What Is Coronavirus?* July 29. Accessed October 9, 2023. <https://www.hopkinsmedicine.org/health/conditions-and-diseases/coronavirus>.
- Jordan, Rob. 2019. "How does climate change affect disease?" *Stanford Earth Matters magazine*, March 15. <https://earth.stanford.edu/news/how-does-climate-change-affect-disease#:~:text=Mordecai%E2%80%99s%20research%20has%20found%20that%20warmer%20temperatures%20increase,mosquitoes%20are%20adapted%20to%20a%20range%20of%20temperatures>.
- Juliano, S.A., and L.P. Lounibos. 2005. "Ecology of invasive mosquitoes: effects on resident species and on human health." *National Library of Medicine*, May: 558-574.

- National Geographic. 2022. *The Many Effects of Flooding*. September 8. Accessed August 25, 2023. <https://education.nationalgeographic.org/resource/many-effects-flooding/>.
- New Jersey Department of Labor and Workforce Development. 2021. *Economic Brief: Measuring the Impacts of COVID-19 on the New Jersey Economy One Year Later*. September. Accessed September 5, 2023. <https://www.nj.gov/labor/labormarketinformation/assets/PDFs/pub/econbrief/NJ%20Economic%20Report%202021.pdf>.
- NRDC. 2015. "Climate Changes Threatens Health." *Natural Resource Defense Council*. Natural Resource Defense Council. October 13. Accessed August 29, 2022. <https://www.nrdc.org/resources/climate-change-threatens-health>.
- NYDOH. 2023. *Positive Tests Over Time, by Region and County*. December 18. Accessed December 18, 2023. <https://coronavirus.health.ny.gov/positive-tests-over-time-region-and-county>.
- NYS DHSES. 2022. *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.
- NYS Division of Budget. 2023. *Pandemic Recovery Overview*. Accessed December 18, 2023. <https://www.budget.ny.gov/pubs/archive/fy23/ex/book/pandemicrecoveryoverview.pdf>.
- NYS DOH. 2023. *Be Tick Free - A Guide for Preventing Lyme Disease*. July 7. Accessed October 9, 2023. <https://www.health.ny.gov/publications/2825/#:~:text=Most%20cases%20of%20Lyme%20disease%20are%20reported%20from,nymph%20ticks%20drop%20off%20to%20the%20forest%20floor>.
- . 2019. *Lyme Disease and Other Diseases Carried by Ticks*. March. Accessed 2021. <https://www.health.ny.gov/diseases/communicable/lyme/>.
- . 2023. *NYS Health Connector*. Accessed March 2023. <https://nyshc.health.ny.gov/web/nyapd/new-york-state-flu-tracker>.
- . 2017. *West Nile Virus (WNV)*. August. https://www.health.ny.gov/diseases/west_nile_virus/fact_sheet.htm.
- . 2017. *West Nile Virus (WNV) Disease*. August. Accessed 2021. https://www.health.ny.gov/diseases/west_nile_virus/index_wnv.htm.
- NYSDEC. 2014. *Pesticide Management for Farms and Agriculture*. November 7. Accessed December 18, 2023. <https://dec.ny.gov/environmental-protection/help-for-businesses/farms-agriculture/pesticide-management>.
- NYSDOH. 2021. *What You Should Know About the Flu*. October. Accessed 2021. <https://www.health.ny.gov/diseases/communicable/influenza/seasonal/>.
- NYSERDA. 2014. *Responding to Climate Change in New York State (ClimAID)*. September. Accessed August 4, 2023. <https://www.nyserdera.ny.gov/climaid>.
- Office of the New York State Comptroller. 2021. *Pandemic and Recovery: Local Government Finances and Federal Assistance Lessons from the Mid-Hudson Region*. October. Accessed 2024.

<https://www.osc.ny.gov/files/local-government/publications/pdf/pandemic-and-recovery-lessons-from-the-mid-hudson-region.pdf>.

- Rockland County Executive. 2021. *Reviving and Rebuilding Rockland*. Accessed 2024. <https://www.rocklandcountyny.gov/departments/county-executive/reviving-and-rebuilding-rockland>.
- Steere, Allen, Jenifer Coburn, and Lisa Glickstein. 2004. "The emergence of Lyme disease." *The Journal of Clinical Investigation* 1093-1011.
- Towers, S., G. Chowell, R Hameed, M Jastrebski, M Khan, J Meeks, A Mubayi, and G Harris. 2013. "Climate Change and Influenza: the likelihood of early and severe influenza seasons following warmer than average winters." *National Library of Medicine*.
- WHO. 2022. *Coronavirus Disease (COVID-19)*. https://www.who.int/health-topics/coronavirus#tab=tab_1.
- World Health Organization. 2009. *Pandemic Influenza Preparedness and Response*. Geneva: World Health Organization.

SECTION 4.3.3 – DROUGHT

- CDC. 2012. "Drought and Health." *Center for Disease Control and Prevention (CDC)*. July 30. <http://www.cdc.gov/nceh/drought/>.
- . 2021. *Health Impacts of Drought*. March 21. <https://www.cdc.gov/nceh/drought/implications.htm>.
- . 2020. *Heat Stress*. August 31. Accessed September 8, 2023. <https://www.cdc.gov/niosh/topics/heatstress/default.html>.
- . 2018. *Sun Exposure*. June 1. Accessed September 8, 2023. <https://www.cdc.gov/niosh/topics/sunexposure/default.html>.
- Cornell University. 2018. *County Projections Explorer*. Accessed December 18, 2023. <https://pad.human.cornell.edu/counties/projections.cfm>.
- County of Rockland. 2021. *2020 Census Data Profile*. Accessed December 18, 2023. https://rocklandgov.com/files/1016/2888/5262/Rockland_County_2020_Data_-_Preliminary_Profile.pdf.
- FAO. 2019. *Proactive drought management*. November. Accessed August 28, 2023. <https://www.fao.org/climate-smart-agriculture/knowledge/practices/drought/en/>.
- FEMA. 2023. *Disaster Declarations for States and Counties*. Accessed 2023. <https://www.fema.gov/data-visualization/disaster-declarations-states-and-counties>.
- . n.d. *National Risk Index*. Federal Emergency Management Agency. Accessed 2023. <https://hazards.fema.gov/nri/map#>.
- . 2019. *National Risk Index*. Accessed August 16, 2023. <https://hazards.fema.gov/nri/map>.
- IPCC. 2016. *Food Security Chapter 5 "Drought"*. <https://www.ipcc.ch/srccl/>.

- MitigateNY. 2018. *Drought*. <https://mitigateny.availabs.org/hazards/drought>.
- National Drought Mitigation Center. 2023. *Types of Drought*. August 2. <https://drought.unl.edu/Education/DroughtIn-depth/TypesofDrought.aspx>.
- NBC. 2022. *No Water for Restaurant Patrons? NY County Enacts Mandatory Restrictions Amid Drought*. August 17. <https://www.nbcnewyork.com/weather/as-severe-drought-continues-one-ny-county-enacts-mandatory-water-restrictions/3829172/>.
- NC State University. 2013. *Temperatures Moderate and Drought Abates in April*. May 10. <https://climate.ncsu.edu/blog/2013/05/climate-summary-april-2013/>.
- NDMC. 2013. "Drought Severity Classification." *National Drought Mitigation Center*. <http://www.unc.edu/~rowlett/units/scales/drought.html>.
- NIDIS. 2019. *Fire*. April 5. Accessed August 28, 2023. <https://www.drought.gov/drought/data-maps-tools/fire>.
- NJDEP. 2021. *New Jersey Drinking Water Watch*. https://www9.state.nj.us/DEP_WaterWatch_public/NJMap.jsp.
- NJDEP. 2017. *New Jersey Water Supply Plan*. Trenton: NJDEP. <https://www.nj.gov/dep/watersupply/pdf/wsp.pdf>.
- NOAA. 2000. *All Dried Up*. Accessed 2016. http://coastwatch.noaa.gov/cwn/images/Drought_Module.pdf.
- NYS DHSES. 2022. *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.
- NYSDEC. 2023. *Drought*. <https://www.dec.ny.gov/lands/5011.html#:~:text=New%20York%20is%20rich%20with%20water%20resources.%20Our,to%2028%20inches%20in%20the%20Lake%20Champlain%20Valley>.
- . 2023. *Drought*. New York State Department of Environmental Conservation. Accessed October 11, 2023. <https://www.dec.ny.gov/lands/5011.html>.
- . 2023. *New York State Drought Management Regions*. <https://www.dec.ny.gov/lands/5014.html>.
- NYSERDA. 2014. *Responding to Climate Change in New York State (ClimAID)*. <https://www.nyserdera.ny.gov/climaid>.
- USDA. 2023. *Disaster Designation Information*. <https://www.fsa.usda.gov/programs-and-services/disaster-assistance-program/disaster-designation-information/index>.
- . 2023. *Drought*. <https://www.climatehubs.usda.gov/climate-impacts/drought>.
- World Economic Forum. 2022. *Climate crisis is speeding the water cycle, satellite data reveals*. May 9. Accessed October 9, 2023. <https://www.weforum.org/agenda/2022/05/climate-crisis-is-speeding-the-water-cycle-satellite-data-reveals/#:~:text=1%20Rising%20global%20temperatures%20as%20a%20result%20of,salty%20ocean%20water%20saltier%2C%20experts%20say.%20More%20items>.

SECTION 4.3.4 – EARTHQUAKE

- Cornell University. 2018. *County Projections Explorer*. Accessed December 18, 2023. <https://pad.human.cornell.edu/counties/projections.cfm>.
- County of Rockland. 2021. *2020 Census Data Profile*. Accessed December 18, 2023. https://rocklandgov.com/files/1016/2888/5262/Rockland_County_2020_Data_-_Preliminary_Profile.pdf.
- CRMP. 2021. *What are earthquake hazards?* California Residential Mitigation Program. July 30. Accessed October 10, 2023. <https://www.californiaresidentialmitigationprogram.com/Resources/Blog/What-are-Earthquake-Hazards>.
- FEMA. 2023. *Declared Disasters*. <https://www.fema.gov/disaster/declarations>.
- . 2023. *Disaster Declarations for States and Counties*. Accessed 2023. <https://www.fema.gov/data-visualization/disaster-declarations-states-and-counties>.
- . 2023. *Earthquake*. <https://hazards.fema.gov/nri/earthquake>.
- . 2016. *National Earthquake Hazards Reduction Program*. <https://training.fema.gov/emiweb/earthquake/neh0102330.htm#:~:text=Ground%20motion%20above%20an%20unconsolidated%20landfill%20or%20soft,the%20local%20amplification%20is%20called%20the%20site%20effect>.
- . n.d. *National Risk Index*. Federal Emergency Management Agency. Accessed 2023. <https://hazards.fema.gov/nri/map#>.
- . 2019. *National Risk Index*. Accessed August 16, 2023. <https://hazards.fema.gov/nri/map>.
- . 2016. *Soil and Rock Types*. <https://training.fema.gov/emiweb/earthquake/neh0102360.htm>.
- Freeman, Sigmund. 2004. "EARTHQUAKE ENGINEERING INTENSITY SCALE: A TEMPLATE ." *Purdue.edu*. August 6. https://engineering.purdue.edu/~ayhan/Publications/13wcee_EEIS%20by%20SAFAITFP.pdf.
- Guglielmo, Wayne. 2010 . "Living on the fault line." *NJMonthly*. June 15. <https://njmonthly.com/articles/jersey-living/living-on-the-fault-line/>.
- Michigan Tech. 2023. *Earthquake Magnitude Scale*. <https://www.mtu.edu/geo/community/seismology/learn/earthquake-measure/magnitude/>.
- MitigateNY. 2018. *Earthquake*. <https://mitigateny.availabs.org/hazards/earthquake>.
- NASA. 2004. *Retreating Glaciers Spur Alaskan Earthquakes*. August 2. https://www.nasa.gov/home/hqnews/2004/jul/HQ_04252_glaciers.html.
- New York State Museum. 2023. "Map & Chart Series." *NYSM*. <https://www.nysm.nysed.gov/publications/map-chart-series>.
- NOAA. 2023. *Storm Events Database*. <https://www.ncdc.noaa.gov/stormevents/>.

- . 2023. *What is a seiche?* January 20. <https://oceanservice.noaa.gov/facts/seiche.html>.
- NYS DHSES. 2022. *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.
- NYSERDA. 2014. *Responding to Climate Change in New York State*. <file:///C:/Users/jake.poland/Downloads/ClimAID-Report.pdf>.
- ThinkHazard. 2023. *Rockland - Earthquake*. Accessed October 11, 2023. <https://www.thinkhazard.org/en/report/30548-united-states-of-america-new-york-rockland/EQ>.
- UC Davis. n.d. *Glacier Deposits*. University of California Davis. Accessed October 11, 2023. [https://geo.libretexts.org/Courses/University_of_California_Davis/GEL_109%253A_Sediments_and_Strata_\(Sumner\)/Textbook_Construction/Glacier_Deposits](https://geo.libretexts.org/Courses/University_of_California_Davis/GEL_109%253A_Sediments_and_Strata_(Sumner)/Textbook_Construction/Glacier_Deposits).
- US SAR Task Force. n.d. *Tsunamis*. <http://www.ussartf.org/tsunamis.htm>.
- USGS. 2023. *Earthquake Catalog*. <https://earthquake.usgs.gov/earthquakes/search/>.
- . 2019. *Earthquake Hazards 201*. August 6. <https://www.usgs.gov/programs/earthquake-hazards/science/earthquake-hazards-201-technical-qa>.
- . 2008. *Earthquakes May Endanger New York More Than Thought, Says Study*. August 21. <https://www.earth.columbia.edu/articles/view/2235#:~:text=It%20is%20parallel%20to%20the%20other%20faults%20beginning,so%20on%2C%20it%20intersects%20the%20Ramapo%20seismic%20zone>.
- . 2023. "Modified Mercalli Intensity Scale." USGS. <https://www.usgs.gov/programs/earthquake-hazards/modified-mercalli-intensity-scale>.
- . 2023. *Moment magnitude, Richter scale - what are the different magnitude scales, and why are there so many?* <https://www.usgs.gov/faqs/moment-magnitude-richter-scale-what-are-different-magnitude-scales-and-why-are-there-so-many>.
- . n.d. *Moment magnitude, Richter scale - what are the different magnitude scales, and why are there so many?* U.S. Geological Survey. Accessed October 9, 2023. <https://www.usgs.gov/faqs/moment-magnitude-richter-scale-what-are-different-magnitude-scales-and-why-are-there-so-many>.
- . 2022. *National Seismic Hazard Model*. U.S. Geological Survey. March 9. Accessed October 9, 2023. <https://www.usgs.gov/programs/earthquake-hazards/science/national-seismic-hazard-model>.
- . 2005. *ShakeMap Manual: Technical Manual, User's Guide, and Software Guide*. Accessed 2024. <https://web.archive.org/web/20110704183632/http://pubs.usgs.gov/tm/2005/12A01/>.
- . 2008. *US National Seismic Hazard Maps*. <https://pubs.usgs.gov/publication/fs20083017>.
- . n.d. "What are the Effects of Earthquakes?" USGS. U.S. Geological Survey. Accessed October 10, 2023. <https://www.usgs.gov/programs/earthquake-hazards/what-are-effects-earthquakes>.
- . n.d. *What are the Effects of Earthquakes?* Accessed August 28, 2023. <https://www.usgs.gov/programs/earthquake-hazards/what-are-effects-earthquakes>.

- . 2023. *What is a fault and what are the different types?* <https://www.usgs.gov/faqs/what-a-fault-and-what-are-different-types>.
- . n.d. *What is a seismic zone, or seismic hazard zone?* U.S. Geological Survey. Accessed October 19, 2023. <https://www.usgs.gov/faqs/what-seismic-zone-or-seismic-hazard-zone>.
- . n.d. *What is liquefaction?* <https://www.usgs.gov/faqs/what-liquefaction>.
- . 2016. "Where Earthquakes Occur." *USGS*. November 30. <https://pubs.usgs.gov/gip/earthq1/where.html>.

SECTION 4.3.5 – EXTREME TEMPERATURE

- AARP. 2022. American Association of Retired Persons. <https://www.aarp.org/health/conditions-treatments/info-2022/heat-wave-dangers.html>.
2022. *Academy of Nutrition and Dietetics*. <https://www.eatright.org/fitness/physical-activity/exercise-nutrition/exercise-safely-in-hot-weather>.
- CDC. 2017. Centers for Disease Control and Prevention. <https://www.cdc.gov/disasters/extremeheat/medical.html>.
- . 2005. *Extreme Cold*. March 22. Accessed September 1, 2023. <https://www.cdc.gov/disasters/winter/pdf/extreme-cold-guide.pdf>.
 - . 2022. *Extreme Heat*. June 17. Accessed September 1, 2023. <https://www.cdc.gov/disasters/extremeheat/index.html>.
 - . 2022. *Heat Stress – Heat Related Illness*. May 13. <https://www.cdc.gov/niosh/topics/heatstress/heatrelillness.html#exhaustion>.
 - . 2012. "Natural Disasters and Severe Weather." *Center for Disease Control and Protection*. Center for Disease Control and Prevention. December 03. Accessed September 2023. <https://www.cdc.gov/disasters/winter/guide.html>.
 - . 2012. "Natural Disasters and Severe Weather." *Center for Disease Control and Protection*. Center for Disease Control and Prevention. December 03. Accessed September 2023. <https://www.cdc.gov/disasters/winter/guide.html>.
 - . 2022. *Pregnant Women*. Centers for Disease Control and Prevention. https://www.cdc.gov/disasters/extremeheat/heat_and_pregnant_women.html#:~:text=Why%20are%20pregnant%20women%20more,body%20and%20the%20developing%20baby.
- Columbia University. 2023. *Columbia University Irving Medical Center*. <https://www.cuimc.columbia.edu/news/heat-stroke-kids-what-watch-and-know#:~:text=%E2%80%9CHeatstroke%20is%20a%20serious%20medical,cannot%20take%20care%20of%20themselves>.
- Cornell University. 2018. *County Projections Explorer*. Accessed December 18, 2023. <https://pad.human.cornell.edu/counties/projections.cfm>.

- . n.d. *The Climate of New York*. Accessed September 2023. <http://www.weather.com/weather/wxclimatology/monthly/USNY0378>.
- County of Rockland. 2021. *2020 Census Data Profile*. Accessed December 18, 2023. https://rocklandgov.com/files/1016/2888/5262/Rockland_County_2020_Data_-_Preliminary_Profile.pdf.
- EAP. 2023. *Learn About Heat Islands*. August. Accessed September 2023. <https://www.epa.gov/heatislands/learn-about-heat-islands>.
- EPA. 2023. *Heat Island Effect*. August 16. Accessed September 2023. <https://www.epa.gov/heat-islands>.
- FEMA. 2023. *Disaster Declarations for States and Counties*. Accessed 2023. <https://www.fema.gov/data-visualization/disaster-declarations-states-and-counties>.
- . n.d. *National Risk Index*. Federal Emergency Management Agency. Accessed 2023. <https://hazards.fema.gov/nri/map#>.
- . 2019. *National Risk Index*. Accessed August 16, 2023. <https://hazards.fema.gov/nri/map>.
2023. *National Geographic*. <https://education.nationalgeographic.org/resource/urban-heat-island/>.
- NOAA. 2009. *Naionanl Weather Service, Heat Wave*. June 25. Accessed September 2023. <https://w1.weather.gov/glossary/index.php?word=heat+wave>.
- . 2023. *Storm Events Database*. National Centers For Environmental Information. Accessed 2023. <https://www.ncdc.noaa.gov/stormevents/choosedates.jsp?statefips=42%2CPENNSYLVANIA>.
- . n.d. *Wind Chill*. Accessed November 2023. <https://www.weather.gov/ama/WindChill>.
- . 2008. *Winter Storms: The Deceptive Killers*. Accessed 2023. <https://nasdonline.org/7153/d002400/winter-storms-the-deceptive-killers-a-preparedness-guide.html>.
- NWS. n.d. *Cold Weather Safety*. National Weather Service. Accessed September 2023. <https://www.weather.gov/safety/cold>.
- . 2023. *Heat Forecast Tools*. July 18. Accessed August 27, 2023. <https://www.weather.gov/safety/heat-index>.
- . 2022. *Stay Safe in the Extreme Cold*. February 8. Accessed August 27, 2023. <https://www.weather.gov/dlh/extremecold>.
- . 2021. "Weather Related Fatality and Injury Statistics." *National Weather Service*. Accessed September 2023. <https://www.weather.gov/hazstat/>.
- NYS DHSES. 2022. *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.
- . 2019. "Hazards." *MitigateNY*. Accessed September 2023. <https://mitigateny.availabs.org/hazards/heatwave>.
- . 2019. "Hazards." *MitigateNY*. Accessed September 2023. <https://mitigateny.availabs.org/hazards/heatwave>.
- NYS DHSES. n.d. "Heat Safety Tips." *NYS DHSES*. Accessed September 2023. <https://www.dhSES.ny.gov/heat-safety-tips>.

- . n.d. "Heat Safety Tips." *NYSDHSES*. Accessed September 2023. <https://www.dhSES.ny.gov/heat-safety-tips>.
- NYSERDA. 2011/2014. *ClimAID - Updating the 2011 ClimAID Climate Risk Information*. Albany: NYS. <https://www.nysERDA.ny.gov/About/Publications/Research%20and%20Development%20Technical%20Reports/Environmental%20Research%20and%20Development%20Technical%20Reports/Response%20to%20Climate%20Change%20in%20New%20York>.
- . 2014. "Responding to Climate Change in New York State (ClimAID)." *NYSERDA*. September. Accessed September 2023. <https://www.nysERDA.ny.gov/About/Publications/Research%20and%20Development%20Technical%20Reports/Environmental%20Research%20and%20Development%20Technical%20Reports/Response%20to%20Climate%20Change%20in%20New%20York>.
- . 2014. "Responding to Climate Change in New York State (ClimAID)." *NYSERDA*. September. Accessed September 2023. <https://www.nysERDA.ny.gov/About/Publications/Research%20and%20Development%20Technical%20Reports/Environmental%20Research%20and%20Development%20Technical%20Reports/Response%20to%20Climate%20Change%20in%20New%20York>.
- . 2014. "Responding to Climate Change in New York State (ClimAID)." *NYSERDA*. September. Accessed September 2023. <https://www.nysERDA.ny.gov/About/Publications/Research%20and%20Development%20Technical%20Reports/Environmental%20Research%20and%20Development%20Technical%20Reports/Response%20to%20Climate%20Change%20in%20New%20York>.
- OSHA. 2023. *Heat Illness at Work*. Occupational Health and Safety Administration. <https://www.osha.gov/heat-exposure#:~:text=Workers%20suffering%20from%20heat%20stroke,Related%20Illnesses%20and%20First%20Aid>.
- United Way of Northern New Jersey. 2021. *United for ALICE*. Accessed March 2024. <https://www.unitedforalice.org/national-overview>.
- US Census Bureau. 2021. *American Community Survey*. https://www.census.gov/programs-surveys/ahs/data/interactive/ahstablecreator.html?s_areas=00000&s_year=2021&s_tablename=TABLE3&s_bygroup1=1&s_bygroup2=1&s_filtergroup1=1&s_filtergroup2=1.
- USGS. 2020. *Drought, Fire and Extreme Weather*. <https://www.usgs.gov/ecosystems/climate-adaptation-science-centers/science/drought-fire-and-extreme-weather>.

SECTION 4.3.6 – FLOOD

- Andrew, Rick. 2021. *Flooding's Impact on Public Water Supplies, Sanitation*. December 09. Accessed February 21, 2023. <https://www.waterworld.com/water-utility-management/article/14211783/floodings-impact-on-public-water-supplies>.
- CDC. 2020. *Mold After a Disaster*. July 28. Accessed June 13, 2023. <https://www.cdc.gov/disasters/mold/index.html>.

- Center for Disaster Resilience. 2016. *The Growing Threat of Urban Flooding: A National Challenge*. https://cdr.umd.edu/sites/cdr.umd.edu/files/resource_documents/COMPRESSEDurban-flooding-report-online-compressed-0319.pdf.
- Cornell University. 2018. *County Projections Explorer*. Accessed December 18, 2023. <https://pad.human.cornell.edu/counties/projections.cfm>.
- County of Rockland. 2021. *2020 Census Data Profile*. Accessed December 18, 2023. https://rocklandgov.com/files/1016/2888/5262/Rockland_County_2020_Data_-_Preliminary_Profile.pdf.
- FEMA. 2023. *Coastal Flooding*. March. <https://hazards.fema.gov/nri/coastal-flooding>.
- . 2022. *Community Status Book*. March 17. Accessed 2023. <https://www.fema.gov/flood-insurance/work-with-nfip/community-status-book>.
- . 2023. *Disaster Declarations for States and Counties*. Accessed 2023. <https://www.fema.gov/data-visualization/disaster-declarations-states-and-counties>.
- . 2014. *Flood Insurance Study: Rockland County New York*. March 3. Accessed September 15, 2023. <https://map1.msc.fema.gov/data/36/S/PDF/36087CV001A.pdf?LOC=877f5654012b56a21eb7d2706e7cb522>.
- . 2020. *Flood Zones*. July 8. Accessed July 7, 2023. <https://www.fema.gov/glossary/flood-zones>.
- . 2007. *Floodplain Management Principles and Current Practices*. <https://training.fema.gov/hiedu/aemrc/courses/coursetreat/fm.aspx>.
- . 2022. *Floodwater After a Disaster or Emergency*. October 04. Accessed June 13, 2023. <https://www.cdc.gov/disasters/floods/floodsafety.html>.
- . 2019. *Guidance for Flood Risk Analysis and Mapping*. November. Accessed July 7, 2023. https://www.fema.gov/sites/default/files/2020-02/FloodwayAnalysis_and_Mapping_Nov_2019.pdf.
- FEMA. 2018. *Ice-Jam Analyses and Mapping*. Guidance for Flood Risk , FEMA. https://www.fema.gov/sites/default/files/2020-02/Ice_Jam_Guidance_Feb_2018.pdf.
- . 2022. *NATIONAL FLOOD INSURANCE PROGRAM*. October. Accessed October 13, 2022. https://www.fema.gov/sites/default/files/documents/fema_nfip-flood-insurance-full-manual_102022.pdf.
- . n.d. *National Risk Index*. Federal Emergency Management Agency. Accessed 2023. <https://hazards.fema.gov/nri/map#>.
- . 2019. *National Risk Index*. Accessed August 16, 2023. <https://hazards.fema.gov/nri/map>.
- . 2020. *Participation in the NFIP*. July 8. Accessed 2023. <https://www.fema.gov/glossary/participation-nfip>.
- . 2019. *Riverine Flooding*. Accessed January 03, 2023. <https://hazards.fema.gov/nri/riverine-flooding>.

- . 2007. *Types of Floods and Floodplains*. JULY 12. Accessed AUGUST 6, 2023. <https://training.fema.gov/hiedu/docs/fmc/chapter%20%20-%20types%20of%20floods%20and%20floodplains.pdf#:~:text=If%20local%20drainage%20conditions%20are%20inadequate%20to%20accommodate,in%20certain%20areas%20may%20cause%20localized%20flooding%20problems.>
- Harris, T. 2008. *How Floods Work*. <http://science.howstuffworks.com/flood.htm>.
- Harris, Tom. 2001. *How Floods Work*. June. Accessed October 13, 2022. <https://science.howstuffworks.com/nature/natural-disasters/flood.htm>.
- NESEC. 2021. *Ice Jams*. Accessed August 6, 2023. <https://nsec.org/ice-jams/>.
- NOAA National Severe Storms Laboratory. 2023. *Severe Weather 101 - Floods*. Accessed 2023. <https://www.nssl.noaa.gov/education/svrwx101/floods/>.
- NOAA. 2021. *SEVERE WEATHER 101*. December 15. Accessed October 13, 2022. <https://www.nssl.noaa.gov/education/svrwx101/floods/faq/>.
- NWS. 2009. *Flash Flood*. National Weather Service. <http://w1.weather.gov/glossary/index.php?word=flash+flood>.
- . 2023. *Flood Infographics*. Accessed 2023. https://www.weather.gov/wrn/flood_infographics.
- . 2011. *Flood Safety*. http://www.erh.noaa.gov/car/WCM/Awareness_Campaigns_files/flood_part_1.htm.
- NYS DHSES. 2022. *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.
- . 2019. *Section 3.9 Flood*. <https://mitigateny.availabs.org/hazards/riverine>.
- NYSERDA. 2014. *Responding to Climate Change in New York State (ClimAID)*. September. Accessed August 4, 2023. <https://www.nyserda.ny.gov/climaid>.
- O'Connor, Jim E., Gordon E. Grant, and John E. Costa. 2002. *The Geology and Geography of Floods*. American Geophysical Union.
- Rokaya, P. 2018. *Trends in the Timing and Magnitude of Ice-Jam Floods in Canada*. <https://www.nature.com/articles/s41598-018-24057-z>.
- US DHS. 2019. *Base Flood Elevation (BFE)*. August 28. Accessed July 7, 2023. <https://www.ready.gov/faq/base-flood-elevation-bfe>.
- USACE. 2022. *Ice Jam Database*. August. Accessed August 2022. <https://icejam.sec.usace.army.mil/ords/f?p=101:7:.....>
- USGS. 2016. *Effects of Urban Development on Floods*. November 29. Accessed August 6, 2023. <https://pubs.usgs.gov/fs/fs07603/#:~:text=The%20changes%20in%20land%20use%20associated%20with%20urban,and%20frequency%20of%20floods%20increase%20in%20nearby%20streams.>
- . 2016. *Ground Water and the Rural Homeowner*. November 30. Accessed August 6, 2023. https://pubs.usgs.gov/gip/gw_ruralhomeowner/#:~:text=In%20addition%20to%20seasonal%20fluctuati

ons%20in%20ground-water%20storage%2C,years%20of%20above-normal%20precipitation%20causes%20a%20corresponding%20rise.

SECTION 4.3.7 – LANDSLIDE

- Cornell University. 2018. *County Projections Explorer*. Accessed December 18, 2023. <https://pad.human.cornell.edu/counties/projections.cfm>.
- County of Rockland. 2021. *2020 Census Data Profile*. Accessed December 18, 2023. https://rocklandgov.com/files/1016/2888/5262/Rockland_County_2020_Data_-_Preliminary_Profile.pdf.
- DOROTHY H. RADBRUCH-HALL, ROGER B. COLTON, WILLIAM E. DAVIES, IVO LUCCHITTA, BETTY A. SKIPP, and DAVID J. VARNES. 1982. "Landslide Overview Map of the Conterminous United States." *USGS.gov*. <https://pubs.usgs.gov/pp/p1183/pp1183.html>.
- EPA. 2013. "Climate Change Impacts and Adapting to Change." September 9. <http://www.epa.gov/climatechange/impacts-adaptation/>.
- . 2013. "Climate Change: Northeast Impacts & Adaptation." June 21. <http://www.epa.gov/climatechange/impacts-adaptation/northeast.html>.
- FEMA. 2023. *Disaster Declarations for States and Counties*. Accessed 2023. <https://www.fema.gov/data-visualization/disaster-declarations-states-and-counties>.
- . 2023. *Disasters Declared*. Accessed September 17, 2023. <https://www.fema.gov/disaster/declarations>.
- . n.d. *National Risk Index*. Federal Emergency Management Agency. Accessed 2023. <https://hazards.fema.gov/nri/map#>.
- . 2019. *National Risk Index*. Accessed August 16, 2023. <https://hazards.fema.gov/nri/map>.
- NYS DHSES. 2022. *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.
- . n.d. *Landslide Safety Tips*. <https://www.dhSES.ny.gov/landslide-safety-tips>.
- NYS. 2019. *NYS Hazard Mitigation Plan 2019: Landslide Hazard*. <https://mitigateny.availabs.org/hazards/landslide>.
- NYSDERDA. 2014. *Responding to Climate Change in New York State (ClimAID)*. <https://www.nyserda.ny.gov/climaid>.
- Rockland County. 2011. *Rockland County Comprehensive Plan 2011*. March 1. <http://rocklandgov.com/departments/planning/comprehensive-plan/>.
- . 2018. *Rockland County Final Hazard Mitigation Plan 2018*. June 8. <https://www.rocklandhmp.com/final-plan/>.
- Rockland Times. 2013. *Haverstraw Landslide of 1906 Commemorated*. January 10. Accessed October 16, 2023. <https://rocklandtimes.com/2013/01/10/haverstraw-landslide-of-1906-commemorated/>.
- USGS. 2020. *Ground Failure*. <https://earthquake.usgs.gov/data/ground-failure/>.

—. n.d. *Landslide Hazard Program*. <https://www.usgs.gov/programs/landslide-hazards>.

SECTION 4.3.8 – SEVERE STORM

Cornell University. 2018. *County Projections Explorer*. Accessed December 18, 2023.

<https://pad.human.cornell.edu/counties/projections.cfm>.

County of Rockland. 2021. *2020 Census Data Profile*. Accessed December 18, 2023.

https://rocklandgov.com/files/1016/2888/5262/Rockland_County_2020_Data_-_Preliminary_Profile.pdf.

FEMA. 2023. *Disaster Declarations for States and Counties*. Accessed 2023. <https://www.fema.gov/data-visualization/disaster-declarations-states-and-counties>.

—. 2023. *Disasters Declared*. Accessed September 17, 2023. <https://www.fema.gov/disaster/declarations>.

—. 2022. *Hazus Earthquake Model User Guidance*. April. Accessed August 28, 2023.

<https://www.fema.gov/sites/default/files/documents/fema-hazus-5.1-earthquake-model-user-guidance.pdf>.

—. 2019. *National Risk Index*. Accessed August 16, 2023. <https://hazards.fema.gov/nri/map>.

Hazwoper OSHA. 2020. *Protecting Workers in Bad Weather Conditions*. November 6. Accessed September 14,

2023. <https://hazwoper-osha.com/blog-post/protecting-workers-in-bad-weather-conditions>.

National Geographic Society. 2023. *Encycopedic Entry: Wind*. May 2.

<https://education.nationalgeographic.org/resource/wind/>.

NFPA. 2013. *Lightning Fires and Lightning Strikes*. June. Accessed August 27, 2023. [https://www.nfpa.org/-/media/Files/News-and-Research/Fire-statistics-and-reports/US-Fire-Problem/Fire-causes/oslightning.ashx?la=en#:~:text=During%202007-](https://www.nfpa.org/-/media/Files/News-and-Research/Fire-statistics-and-reports/US-Fire-Problem/Fire-causes/oslightning.ashx?la=en#:~:text=During%202007-2011%2C%20U.S.%20local%20fire%20departments%20responded%20to,%24451%20million%20in%20direct%20propert)

[2011%2C%20U.S.%20local%20fire%20departments%20responded%20to,%24451%20million%20in%20direct%20propert](https://www.nfpa.org/-/media/Files/News-and-Research/Fire-statistics-and-reports/US-Fire-Problem/Fire-causes/oslightning.ashx?la=en#:~:text=During%202007-2011%2C%20U.S.%20local%20fire%20departments%20responded%20to,%24451%20million%20in%20direct%20propert).

NOAA. 2021. *NOAA Historical Hurricane Tracks Tool*. <https://coast.noaa.gov/hurricanes/#map=6.07/41.171/-74.06&search=eyJzZWYyZ2hTdHJpbmciOiJSb2NrbGFuZCBDb3VudHksIE5ldyBZb3JrLCBVU0EiLCJzZWYyZ2hUeXBlljoiZ2VvY29kZWQiLCJvc21JRCi6IjE4MzUzNjMiLCJjYXRIZ29yaWVzIjpbIkg1IiwidSDQiLCJIMyIsIkgylwiSDEiLCJUUyIsIiREliwiRV>.

[74.06&search=eyJzZWYyZ2hTdHJpbmciOiJSb2NrbGFuZCBDb3VudHksIE5ldyBZb3JrLCBVU0EiLCJzZWYyZ2hUeXBlljoiZ2VvY29kZWQiLCJvc21JRCi6IjE4MzUzNjMiLCJjYXRIZ29yaWVzIjpbIkg1IiwidSDQiLCJIMyIsIkgylwiSDEiLCJUUyIsIiREliwiRV](https://coast.noaa.gov/hurricanes/#map=6.07/41.171/-74.06&search=eyJzZWYyZ2hTdHJpbmciOiJSb2NrbGFuZCBDb3VudHksIE5ldyBZb3JrLCBVU0EiLCJzZWYyZ2hUeXBlljoiZ2VvY29kZWQiLCJvc21JRCi6IjE4MzUzNjMiLCJjYXRIZ29yaWVzIjpbIkg1IiwidSDQiLCJIMyIsIkgylwiSDEiLCJUUyIsIiREliwiRV).

—. 2023. *Thunderstorms*. April 14. <https://www.noaa.gov/jetstream/thunderstorms>.

—. 2023. *Tropical Cyclone Introducton*. September 8. [https://www.noaa.gov/jetstream/tropical/tropical-cyclone-introduction#:~:text=A%20tropical%20cyclone%20is%20a%20warm-](https://www.noaa.gov/jetstream/tropical/tropical-cyclone-introduction#:~:text=A%20tropical%20cyclone%20is%20a%20warm-core%20low%20pressure,an%20organized%20circulation.%20These%20include%20hurricanes%20and%20typhoons)

[core%20low%20pressure,an%20organized%20circulation.%20These%20include%20hurricanes%20and%20typhoons](https://www.noaa.gov/jetstream/tropical/tropical-cyclone-introduction#:~:text=A%20tropical%20cyclone%20is%20a%20warm-core%20low%20pressure,an%20organized%20circulation.%20These%20include%20hurricanes%20and%20typhoons).

NOAA-NCEI. 2023. *2023 Monthly Mean Wind Speed*. August.

<https://www.ncei.noaa.gov/access/monitoring/wind/>.

- NOAA-NHC. n.d. *Saffir-Simpson Hurricane Wind Scale*. <https://www.nhc.noaa.gov/aboutsshws.php#:~:text=Saffir-Simpson%20Hurricane%20Wind%20Scale%20%20%20%20Category,occur%3A%20Well-bui%20...%20%201%20more%20rows%20>.
- NOAA-NSSL. n.d. *Severe Weather 101: Hail*. <https://nssl.noaa.gov/education/svrwx101/hail/>.
- . n.d. *Severe Weather 101: Tornado Basics*. <https://www.nssl.noaa.gov/education/svrwx101/tornadoes/>.
- . n.d. *Thunderstorm Basics*. <https://www.nssl.noaa.gov/education/svrwx101/thunderstorms/>.
- NPS. 2023. *Nor'easters*. February 6. <https://www.nps.gov/acad/learn/nature/noreasters.htm>.
- NWS. 2019. *Hail Safety Rules*. October 7. Accessed August 27, 2023. <https://www.bing.com/search?q=an+extreme+event+can+carry+hail+stones+traveling+at+speeds+greater+than+100+miles+per+hour&q=n&form=QBRE&sp=1&lq=1&pq=while+hailstorms+are+not+frequently+known+to+cause+major+injuries+or+damage+in+new+jersey%2C+an+extreme+e>.
- . n.d. *Hurricane and Tropical Storm Watches, Warnings, Advisories and Outlooks*. <https://www.weather.gov/safety/hurricane-ww>.
- . n.d. *Lightning Victims*. National Weather Service. Accessed October 12, 2023. <https://www.weather.gov/safety/lightning-victims>.
- . n.d. *Severe Thundertstorm Safety*. <https://www.weather.gov/safety/thunderstorm>.
- . n.d. *The Enhanced Fujita Scale (EF Scale)*. <https://www.weather.gov/oun/efscale>.
- . n.d. *Understand Severe Weather Alerts*. <https://www.weather.gov/safety/thunderstorm-ww>.
- . n.d. *Weather Safety: Tornadoes*. <https://www.weather.gov/mfl/tornadoes>.
- . n.d. *What is a Nor'easter?* <https://www.weather.gov/safety/winter-noreaster>.
- . 2011. *Wind Warnings, Watches and Advisories*. February 19. <https://www.weather.gov/safety/wind-ww>.
- NYS DHSES. 2022. *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.
- NYS. 2019. *NYS Hazard Mitigation Plan 2019: Hurricane*. <https://mitigateny.availabs.org/hazards/hurricane>.
- . 2019. *NYS Hazard Mitigation Plan 2019: Tornado Hazard*. <https://mitigateny.availabs.org/hazards/tornado>.
- NYSERDA. 2023. *Responding to Climate Change in New York State (ClimAID)*. <https://www.nyserra.ny.gov/About/Publications/Energy-Analysis-Reports-and-Studies/Environmental-Research-and-Development-Technical-Reports/Response-to-Climate-Change-in-New-York>.
- State of New Jersey. 2019. *2019 New Jersey State Hazard Mitigation Plan*. Accessed August 27, 2023. <https://www.nj.gov/njoem/mitigation/2019-mitigation-plan.shtml>.
- U.S. Climate Resilience Toolkit. 2016. *Changing Ecosystems and Infectious Diseases*. November 16. Accessed August 27, 2023. <https://toolkit.climate.gov/topics/human-health/alterd-risk-infectious-diseases>.

- U.S. Department of Commerce; NOAA; NWS. 1994. *Thunderstorms and Lightning: a preparedness guide*. January. <https://www.weather.gov/media/grr/brochures/nwsthunderstorms&lightning.pdf#:~:text=Of%20the%20estimated%20100%2C000%20thunderstorms%20that%20occur%20each,diameter%2C%20wind%2058%20mph%20or%20higher%2C%20or%20tornadoes.>
- US EPA. 2023. *Climate Change Indicators: Weather and Climate*. July 26. Accessed August 27, 2023. <https://www.epa.gov/climate-indicators/weather-climate>.

SECTION 4.3.9 – SEVERE WINTER STORM

- Cornell University College of Agriculture and Life Sciences. 2011. *New York Climate Change*. Accessed 2023. <http://senecacountyce.org/resources/new-york-s-changing-climate>.
- Cornell University. 2018. *County Projections Explorer*. Accessed December 18, 2023. <https://pad.human.cornell.edu/counties/projections.cfm>.
- County of Rockland. 2021. *2020 Census Data Profile*. Accessed December 18, 2023. https://rocklandgov.com/files/1016/2888/5262/Rockland_County_2020_Data_-_Preliminary_Profile.pdf.
- Dolce, Chris. 2012. *How to Stay Safe From Ice Storm*. <https://weather.com/en-CA/canada/news/news/2018-01-03-ice-storm-damage-impacts-20121123>.
- FEMA. 2023. *Disaster Declarations for States and Counties*. Accessed 2023. <https://www.fema.gov/data-visualization/disaster-declarations-states-and-counties>.
- . 2019. *National Risk Index*. Accessed August 16, 2023. <https://hazards.fema.gov/nri/map>.
- . n.d. *Social Vulnerability*. Federal Emergency Management Agency . Accessed March 2024. <https://hazards.fema.gov/nri/social-vulnerability>.
- Lam, Linda. 2019. "Ground Blizzards: Why Blizzard Warnings are Issued with Little or No Falling Snow."
- New York State. n.d. *Building Standards and Codes*. Accessed March 2024. <https://dos.ny.gov/building-standards-and-codes>.
- NOAA. 2021. *National Oceanic and Atmospheric Administration*. Accessed September 2023. <https://www.nssl.noaa.gov/education/svrwx101/winter/types/>.
- . n.d. *Regional Snowfall Index (RSI)*. Accessed September 2023. <https://www.ncei.noaa.gov/access/monitoring/rsi/>.
- . n.d. *Severe Weather 101*. National Oceanic & Atmospheric Administration . Accessed 2023. <https://www.nssl.noaa.gov/education/svrwx101/winter/types/>.
- . 2023. *Storm Event Database*. National Centers for Environmental Information. Accessed 2023. <https://www.ncdc.noaa.gov/stormevents/choosedates.jsp?statefips=42%2CPENNSYLVANIA>.
- NSSL. 2021. *Glossary of Terms*. NSSL. <https://w1.weather.gov/glossary/>.

- NSSL. 2021. *Severe Weather 101 - Winter Weather*. NSSL. <https://www.nssl.noaa.gov/education/svrwx101/winter/types/>.
- NWS. 2021. *Definitions, Threshold, Criteria for Warning*. NWS.
- NYS DHSES. 2022. *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.
- NYS DHSES. 2019. *Mitigate NY*. Albany: NYS. <https://mitigateny.availabs.org/>.
- . 2019. "Snow Storm." *MitigateNY*. Accessed August 26, 2022. <https://mitigateny.availabs.org/hazards/winterweat>.
- NYSDHSES. n.d. *Winter Is Coming*. Accessed 2023. <https://www.dhSES.ny.gov/>.
- NYSERDA. 2011/2014. *ClimAID - Updating the 2011 ClimAID Climate Risk Information*. Albany: NYS. <https://www.nysERDA.ny.gov/About/Publications/Research%20and%20Development%20Technical%20Reports/Environmental%20Research%20and%20Development%20Technical%20Reports/Response%20to%20Climate%20Change%20in%20New%20York>.
- . 2014. *Responding to Climate Change in New York State (ClimaAID)*. <https://www.nysERDA.ny.gov/About/Publications/Energy-Analysis-Reports-and-Studies/Environmental-Research-and-Development-Technical-Reports/Response-to-Climate-Change-in-New-York>.
- The Climate Reality Project. 2022. *Winter Weather and the Climate Crisis: Explained*. November. Accessed March 2024. <https://www.climateRealityProject.org/blog/winter-weather-and-climate-crisis-explained>.
- US Census. 2020. *Explore Data*. Accessed 2021. <https://www.census.gov/>.
- USGS. 2020. "Snowmelt Runoff and Water Cycle." https://www.usgs.gov/special-topic/water-science-school/science/snowmelt-runoff-and-water-cycle?qt-science_center_objects=0#qt-science_center_objects.

SECTION 4.3.10 – WILDFIRE

- Cornell University. 2018. *County Projections Explorer*. Accessed December 18, 2023. <https://pad.human.cornell.edu/counties/projections.cfm>.
- County of Rockland. 2021. *2020 Census Data Profile*. Accessed December 18, 2023. https://rocklandgov.com/files/1016/2888/5262/Rockland_County_2020_Data_-_Preliminary_Profile.pdf.
- CSSR. 2017. *Chapter 8: Drought, Floods, and Wildfire*. <https://science2017.globalchange.gov/chapter/8/>.
- FEMA. 2023. *Disaster Declarations for States and Counties*. Accessed 2023. <https://www.fema.gov/data-visualization/disaster-declarations-states-and-counties>.
- . 2021. *Fire Incidents for States and Counties*. July 1. <https://www.fema.gov/data-visualization/fire-incidents-states-and-counties>.

- . 2020. *Flood Risks Increase After Fires*. November. Accessed August 30, 2023. https://www.fema.gov/sites/default/files/documents/fema_flood-after-fire_factsheet_nov20.pdf.
- . 2019. *National Risk Index*. Accessed August 16, 2023. <https://hazards.fema.gov/nri/map>.
- . n.d. *Radiation, Convection, and Firebrands*. Federal Emergency Management Agency. Accessed October 9, 2023. <https://emilms.fema.gov/IS320/WM0102020text.htm>.
- Harvard University. 2022. *A Deadly Mix: Wildfires and Urban Air Pollution Create Toxic Ozone*. February 25. Accessed August 30, 2023. <https://sitn.hms.harvard.edu/flash/2022/a-deadly-mix-wildfires-and-urban-air-pollution-create-toxic-ozone/>.
- MitigateNY. 2018. *Wildfire*. <https://mitigateny.availabs.org/hazards/wildfire>.
- NBC. 2023. *Major Fire Tears Through Rockland County as 30-Foot Flames Soar Just Feet From Homes*. April 15. <https://www.nbcnewyork.com/weather/major-brush-fire-tears-through-rockland-county-homes-endangered/4241820/>.
- NIDIS. 2023. *Keetch-Byram Drought Index*. <https://www.drought.gov/data-maps-tools/keetch-byram-drought-index>.
- . 2023. *Wildfire Management*. Accessed August 30, 2023. <https://www.drought.gov/sectors/wildfire-management>.
- NOAA. 2023. *Dead Fuel Moisture*. <https://www.ncei.noaa.gov/access/monitoring/dyk/deadfuelmoisture>.
- . n.d. *Haines Index*. National Oceanic and Atmospheric Administration. Accessed October 9, 2023. <https://graphical.weather.gov/definitions/defineHaines.html>.
- . 2023. *Storm Events Database*. <https://www.ncdc.noaa.gov/stormevents/>.
- NPS. 2023. *Understanding Fire Danger*. August 17. <https://www.nps.gov/articles/understanding-fire-danger.htm>.
- . 2020. *Wildland Fire: What is a Prescribed Fire?* March 19. <https://www.nps.gov/articles/what-is-a-prescribed-fire.htm>.
- NYS DHSES. 2022. *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.
- NYSDEC. 2023. *Fire Danger Map*. Department of Environmental Conservation. October 9. Accessed October 9, 2023. <https://www.dec.ny.gov/lands/68329.html>.
- . 2023. *Fire Danger Map*. September 12. <https://www.dec.ny.gov/lands/68329.html>.
- . 2023. *Firewise New York*. <https://www.dec.ny.gov/lands/42524.html#:~:text=Many%20areas%20in%20New%20York%2C%20particularly%20those%20that,Island%20Pine%20Barrens%20are%20examples%20of%20fire-prone%20areas>.
- . 2017. *Map of Wildfires as Reported by NYS Forest Rangers and Fire Departments*. <https://www.dec.ny.gov/lands/68333.html>.
- . 2018. *Map of Wildland Fire Protection Areas*. <https://www.dec.ny.gov/lands/68331.html>.

- . 2017. *Wildfires*.
<https://www.dec.ny.gov/lands/4975.html#:~:text=According%20to%20Forest%20Rangers%20Division%20wildfire%20occurrence%20data,campfires%20cause%2016%25%3B%20children%20are%20responsibl e%20for%204%25%3B>.
- NYSERDA. 2014. *Responding to Climate Change in New York State (ClimaAID)*.
<https://www.nyserra.ny.gov/About/Publications/Energy-Analysis-Reports-and-Studies/Environmental-Research-and-Development-Technical-Reports/Response-to-Climate-Change-in-New-York>.
- Podschwit, H, N Larkin, E Steel, A Cullen, and E Alvarado. 2018. *Multi-Model Forecasts of Very-Large Fire Occurrences during the End of the 21st Century*. December 19. Accessed October 12, 2023.
<https://www.mdpi.com/2225-1154/6/4/100#:~:text=Although%20representing%20only%20a%20small%20fraction%20of%20the,enviro nmental%20risks%20that%20are%20unlike%20most%20other%20wildfires>.
- Radeloff, C, D Helmers, H Kramer, M Mockrin, P Alexandre , A Bar-Massada, and T Hawbaker. 2020. *WUI Change 1990-2020*. <https://silvis.forest.wisc.edu/data/wui-change/>.
- Radeloff, Volker, David Helmers, H Kramer, and Susan Stewart . 2018. *Rapid growth of the US wildland-urban interface raises wildfire risk*. March 12. Accessed October 9, 2023.
<https://www.pnas.org/doi/10.1073/pnas.1718850115>.
- Stewart, S, V Radeloff , R Hammer, and T Hawbaker. 2006. "Defining the Wildland-Urban Interface." *SILVIS Lab*.
<https://silvis.forest.wisc.edu/wp-content/uploads/sites/379/2018/10/Stewart-et-al-JOF-2007.pdf>.
- U.S. Department of the Interior. 2012. "Integrating and Coordinating Wildland Fire and Invasive Species Management Efforts." October 12. <https://www.doi.gov/sites/doi.gov/files/nisc-wflcmemo-final-10-12-2022.pdf>.
- United Nations. 2021. *Wildfires – a growing concern for sustainable development*. August. Accessed August 30, 2023.
https://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/publication/PB_111.pdf#:~:text=Catastrophic%20wildfires%20kill%2C%20injure%20and%20displace%20wildlife%20and,their%20population%2C%20and%20pushing%20them%20to wards%20becoming%20endangere.
- USDA. n.d. *Narrative Descriptions and Color Codes for Fire*.
https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd646166.pdf#:~:text=Narrative%20Descriptio ns%20and%20Color%20Codes%20for%20Fire-Danger%20Classes,may%20exist%20due%20to%20agency%20and%20For%20unit%20policy.%29%3A.
- USFA. 2019. *Fire Risk in 2019*. <https://www.usfa.fema.gov/downloads/pdf/statistics/v21i8.pdf>.
- USFS. 2011. *Wildland Fire*. January. Accessed August 30, 2023. <https://www.fs.usda.gov/ccrc/topics/wildfire>.
- USGS. 2022. *The wildland-urban interface in the United States based on 125 million building locations*. March 27.
<https://www.usgs.gov/publications/wildland-urban-interface-united-states-based-125-million-building-locations#:~:text=Our%20building->

based%20WUI%20maps%20identified%205.6%25%20%E2%80%93%2018.8%25,increasing%20WUI%20a rea%20but%20excluding%20isolated%20buil.

- . 2023. *Water Quality After Wildfire*. April 11. Accessed August 30, 2023. <https://www.usgs.gov/mission-areas/water-resources/science/water-quality-after-wildfire#:~:text=Wildfires%20pose%20a%20substantial%20risk%20to%20water%20supplies,nutrients%2C%20and%20metals%20to%20rivers%2C%20lakes%2C%20and%20reservoirs.>
- . 2023. *Wildfire Fire Potential Index (WFPI)*. <https://www.usgs.gov/fire-danger-forecast/wildland-fire-potential-index-wfpi>.

WFAS. 2023. *National Fuel Moisture Database*. August 2. <https://www.wfas.net/index.php>.

SECTION 4.4 – HAZARD RANKING

NYS DHSES. (2022). *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.

SECTION 5 – CAPABILITY ASSESSMENT

NYS DHSES. 2022. *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.

NYS DoS. 2024. *Local Waterfront Revitalization*. New York State Department of State. Accessed 2024. <https://dos.ny.gov/local-waterfront-revitalization-program>.

- . 2024. *Local Waterfront Revitalization Planning Process*. New York State Department of State. Accessed 2024. <https://dos.ny.gov/local-waterfront-revitalization-planning-process>.

Verisk Analytics, Inc. 2023. *CRS Data Visualization*. October. Accessed 2023. <https://www.crsviz.com/>.

SECTION 6 – MITIGATION STRATEGY

FEMA. 2023. "Local Mitigation Planning Handbook." May. https://www.fema.gov/sites/default/files/documents/fema_local-mitigation-planning-handbook_052023.pdf.

NYS DHSES. 2022. *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.

Rockland County. 2020. "Rockland County Open Space Acquisition Program." Accessed 2024. <https://www.rocklandcountyny.gov/home/showpublisheddocument/428/638193887592400000>.

SECTION 7 – PLAN MAINTENANCE

FEMA. 2023. "Local Mitigation Planning Handbook ." May. Accessed 2024. https://www.fema.gov/sites/default/files/documents/fema_local-mitigation-planning-handbook_052023.pdf.

NYS DHSES. (2022). *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.

SECTION 8 – PLANNING PARTNERSHIP

NYS DHSES. (2022). *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.

SECTION 9.1 – ROCKLAND COUNTY

IPCC. (2022). *Glossary*. doi:10.1017/9781009325844.029

NYS DHSES. (2022). *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.

SECTION 9.2 – AIRMONT (V)

IPCC. (2022). *Glossary*. doi:10.1017/9781009325844.029

NYS DHSES. (2022). *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.

SECTION 9.3 – CHESTNUT RIDGE (V)

NYS DHSES. (2022). *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.

SECTION 9.4 – CLARKSTOWN (T)

IPCC. (2022). *Glossary*. doi:10.1017/9781009325844.029

NYS DHSES. (2022). *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.

SECTION 9.5 – GRAND VIEW-ON-HUDSON (V)

IPCC. (2022). *Glossary*. doi:10.1017/9781009325844.029

NYS DHSES. (2022). *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.

SECTION 9.6 – HAVERSTRAW (T)

IPCC. (2022). *Glossary*. doi:10.1017/9781009325844.029

NYS DHSES. (2022). *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.

SECTION 9.7 – HAVERSTRAW (V)

IPCC. (2022). *Glossary*. doi:10.1017/9781009325844.029

NYS DHSES. (2022). *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.

SECTION 9.8 – HILLBURN (V)

IPCC. (2022). *Glossary*. doi:10.1017/9781009325844.029

NYS DHSES. (2022). *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.

SECTION 9.9 – KASER (V)

IPCC. (2022). *Glossary*. doi:10.1017/9781009325844.029

NYS DHSES. (2022). *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.

SECTION 9.10 – MONTEBELLO (V)

IPCC. (2022). *Glossary*. doi:10.1017/9781009325844.029

NYS DHSES. (2022). *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.

SECTION 9.11 – NEW HEMPSTEAD (V)

IPCC. (2022). *Glossary*. doi:10.1017/9781009325844.029

NYS DHSES. (2022). *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.

SECTION 9.12 – NEW SQUARE (V)

IPCC. (2022). *Glossary*. doi:10.1017/9781009325844.029

NYS DHSES. (2022). *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.

SECTION 9.13 – NYACK (V)

IPCC. (2022). *Glossary*. doi:10.1017/9781009325844.029

NYS DHSES. (2022). *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.

SECTION 9.14 – ORANGETOWN (T)

IPCC. (2022). *Glossary*. doi:10.1017/9781009325844.029

NYS DHSES. (2022). *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.

SECTION 9.15 – PIERMONT (V)

IPCC. (2022). *Glossary*. doi:10.1017/9781009325844.029

NYS DHSES. (2022). *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.

SECTION 9.16 – POMONA (V)

IPCC. (2022). *Glossary*. doi:10.1017/9781009325844.029

NYS DHSES. (2022). *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.

SECTION 9.17 – RAMAPO (T)

IPCC. 2022. "Glossary." *IPCC_AR6_WGII_Annex-II*. Intergovernmental Panel on Climate Change. Accessed 2023. doi:10.1017/9781009325844.029.

NYS DHSES. 2022. *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.

Town of Ramapo. 2023. *Town of Ramapo Information*. Accessed 2023. <https://www.ramapo.org/index.php>.

SECTION 9.18 – SLOATSBURG (V)

IPCC. 2022. "Glossary." *IPCC_AR6_WGII_Annex-II*. Intergovernmental Panel on Climate Change. Accessed 2023. doi:10.1017/9781009325844.029.

NYS DHSES. 2022. *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.

Rockland County. 2018. *DMA 2000 Hazard Mitigation Plan Update - Rockland County, New York*.

Village of Sloatsburg. n.d. *About Sloatsburg*.

SECTION 9.19 – SPRING VALLEY (V)

IPCC. 2022. "Glossary." *IPCC_AR6_WGII_Annex-II*. Intergovernmental Panel on Climate Change. Accessed 2023. doi:10.1017/9781009325844.029.

NYS DHSES. 2022. *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.

Rockland County. 2018. *DMA 2000 Hazard Mitigation Plan Update - Rockland County, New York*.

Village of Spring Valley. n.d. *About the Village of Spring Valley*. <https://villagespringvalley.org/faq/>.

SECTION 9.20 – STONY POINT (T)

IPCC. 2022. "Glossary." *IPCC_AR6_WGII_Annex-II*. Intergovernmental Panel on Climate Change. Accessed 2023. doi:10.1017/9781009325844.029.

NYS DHSES. 2022. *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.

Rockland County. 2018. *DMA 2000 Hazard Mitigation Plan Update - Rockland County, New York*.

SECTION 9.21 – SUFFERN (V)

IPCC. 2022. "Glossary." *IPCC_AR6_WGII_Annex-II*. Intergovernmental Panel on Climate Change. Accessed 2023. doi:10.1017/9781009325844.029.

NYS DHSES. 2022. *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.

Rockland County. 2018. *DMA 2000 Hazard Mitigation Plan Update - Rockland County, New York*.

SECTION 9.22 – UPPER NYACK (V)

IPCC. 2022. "Glossary." *IPCC_AR6_WGII_Annex-II*. Intergovernmental Panel on Climate Change. Accessed 2023. doi:10.1017/9781009325844.029.

NYS DHSES. 2022. *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.

Rockland County. 2018. *DMA 2000 Hazard Mitigation Plan Update - Rockland County, New York*.

SECTION 9.23 – WESLEY HILLS (V)

IPCC. 2022. "Glossary." *IPCC_AR6_WGII_Annex-II*. Intergovernmental Panel on Climate Change. Accessed 2023. doi:10.1017/9781009325844.029.

NYS DHSES. 2022. *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.

Rockland County. 2018. *DMA 2000 Hazard Mitigation Update - Rockland County, New York*.

SECTION 9.24 – WEST HAVERSTRAW (V)

IPCC. 2022. "Glossary." *IPCC_AR6_WGII_Annex-II*. Intergovernmental Panel on Climate Change. Accessed 2023. doi:10.1017/9781009325844.029.

NYS DHSES. 2022. *2022 New York State Hazard Mitigation Planning Standards*. New York State Division of Homeland Security and Emergency Services.

Rockland County. 2018. *DMA 2000 Hazard Mitigation Plan Update - Rockland County, New York*.

Village of West Haverstraw. 2020. *About Us*. https://www.westhaverstraw.org/about_us/index.php.