

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

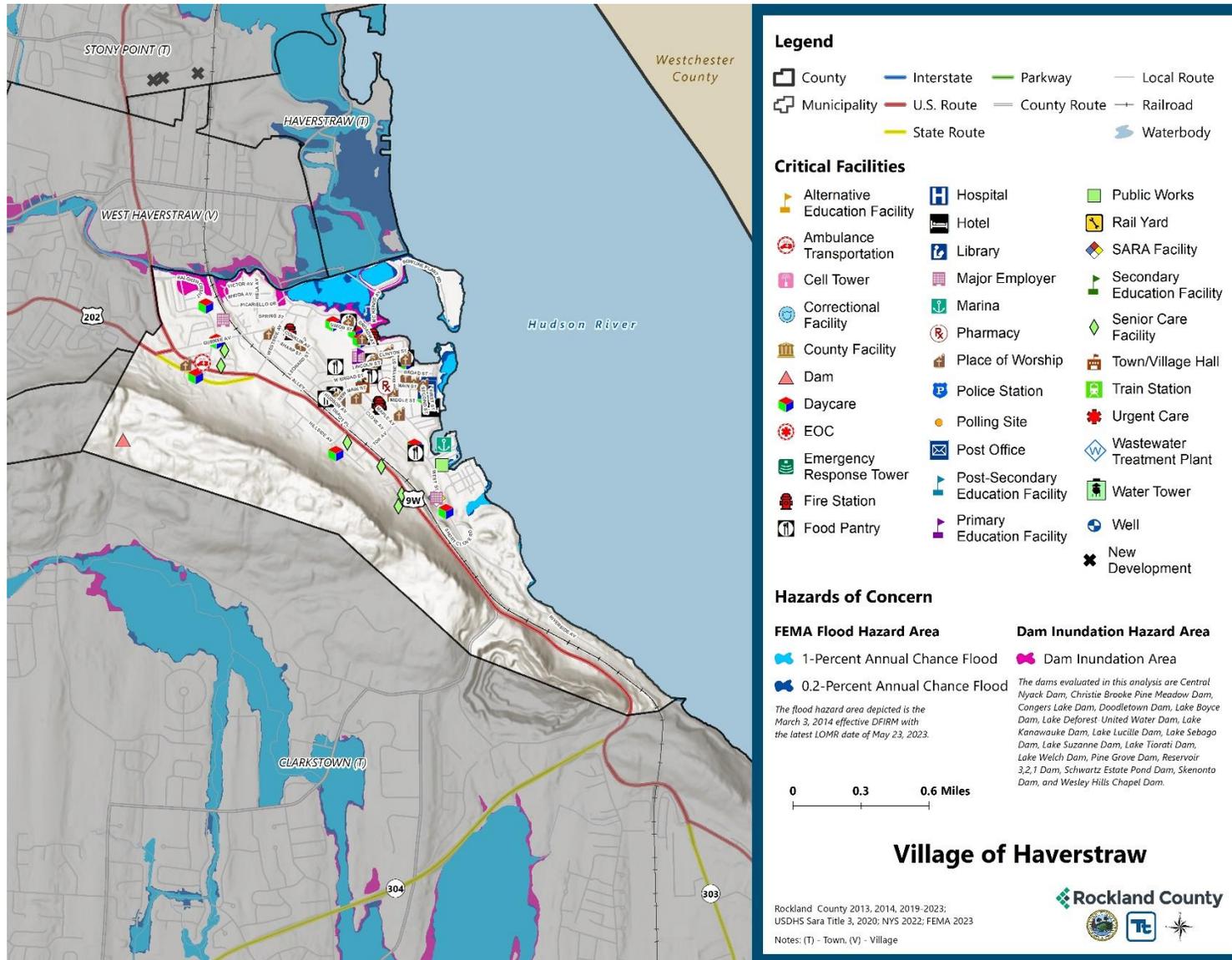
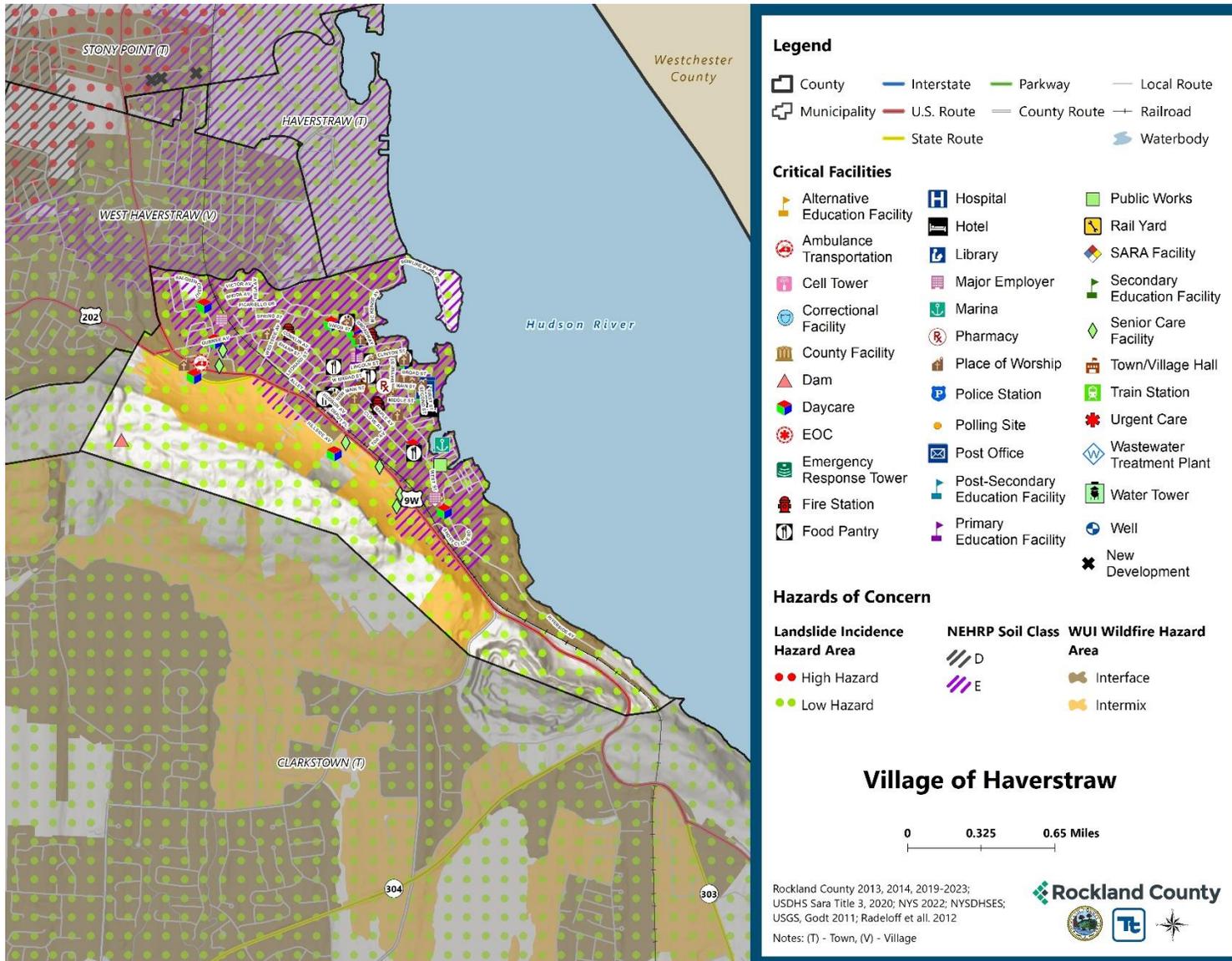


Figure 9.7-2. Village of Haverstraw Hazard Landslide, Earthquake, and Wildfire Hazard Area Extent and Location



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</p> <p>2. N/A</p>	<p>1. Include</p> <p>2. N/A</p> <p>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