

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, <i>NY Code – Article 14 §460-467</i>	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

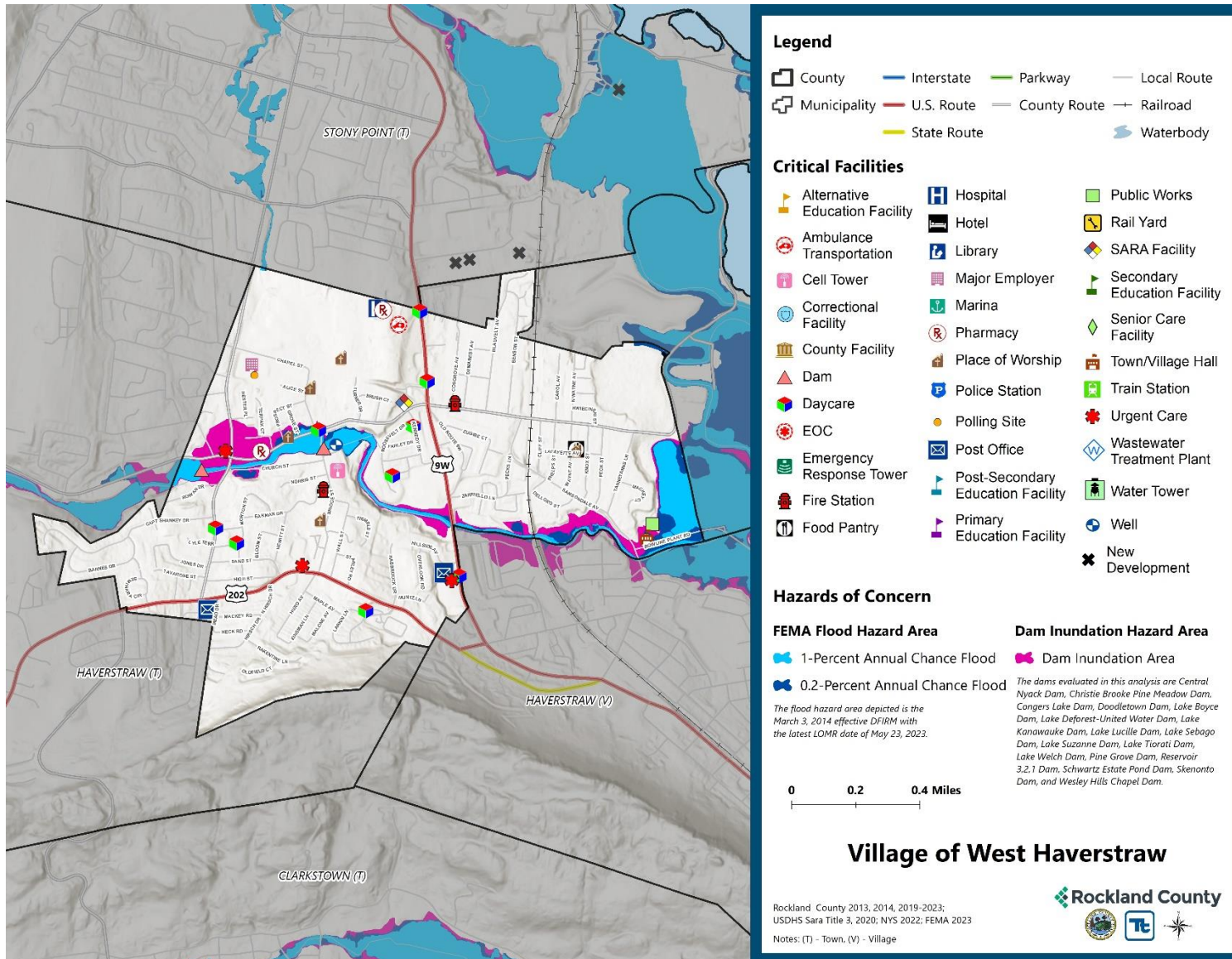
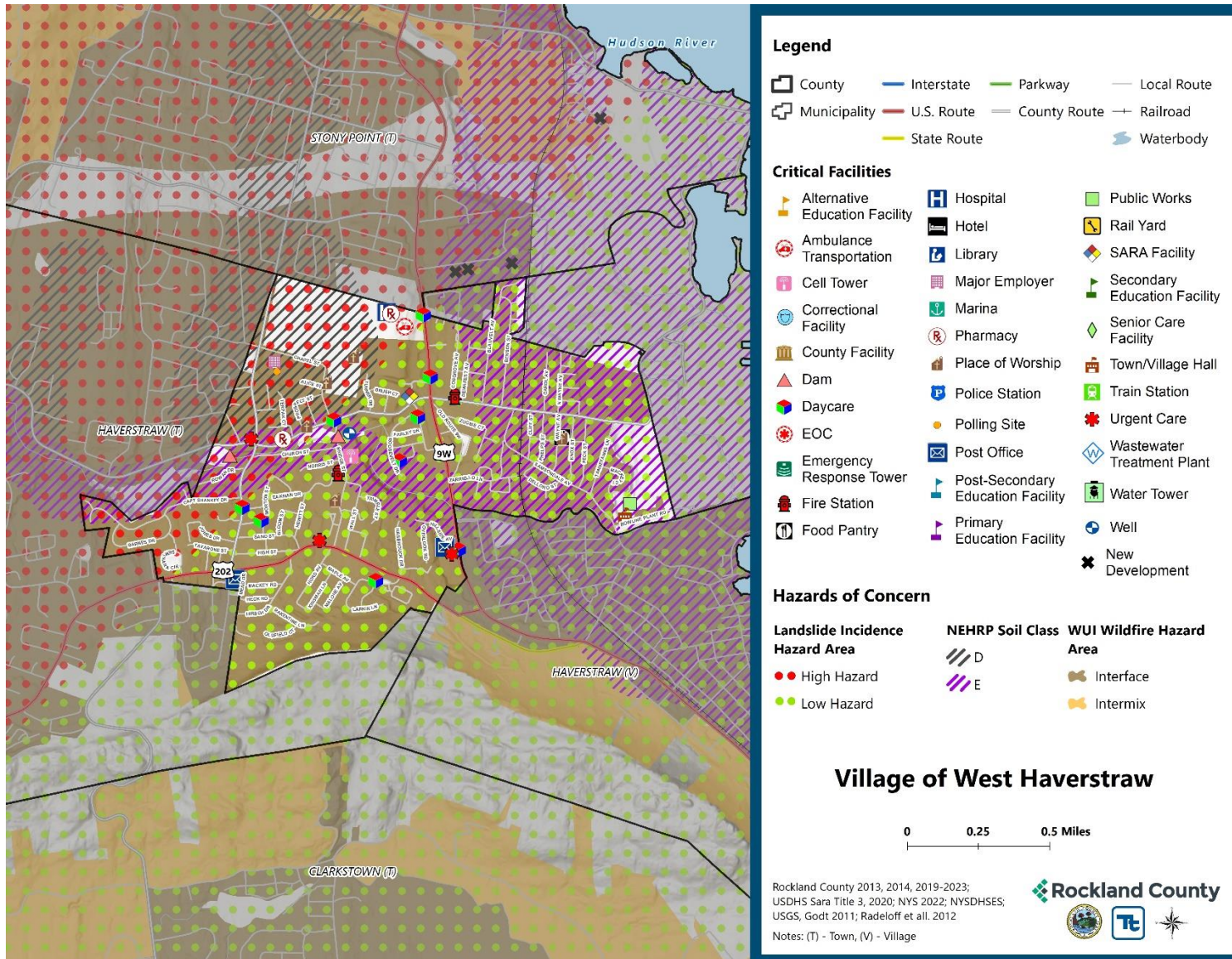


Figure 9.24-2. Village of West Haverstraw Landslide, Earthquake, and Wildfire Hazard Area Extent and Location



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	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