

## 9.25 VILLAGE OF WEST HAVERSTRAW

This section presents the jurisdictional annex for the Village of West Haverstraw.

### 9.25.1 Hazard Mitigation Plan Point of Contact

The following individuals have been identified as the hazard mitigation plan’s primary and alternate points of contact.

Primary Point of Contact	Alternate Point of Contact
Ralph W. Kirschkel, Trustee/Emergency Services Coordinator 845-825-7606 <a href="mailto:rkirschkel@westhaverstraw.org">rkirschkel@westhaverstraw.org</a>	Jay Barry, Superintendent of Highways 845-608-2102 <a href="mailto:jbarry@westhaverstraw.org">jbarry@westhaverstraw.org</a>
Local Floodplain Administrator	
Joe Corless, Village Engineer 845-641-7636 <a href="mailto:joe@corless.com">joe@corless.com</a>	

### 9.25.2 Municipal Profile

The Village of West Haverstraw is located in the eastern half of the Town of Haverstraw, northwest of Haverstraw village, east of Thiells hamlet, south of the town and hamlet of Stony Point, and west of the Hudson River. According to the 2010 Census, the community's population was 10,165. The village has a total area of 1.5 square miles, none of which is water.

### Growth/Development Trends

The following table summarizes recent residential/commercial development since 2010 to present and any known or anticipated major residential/commercial development and major infrastructure development that has been identified in the next five years within the municipality. Refer to the map in 9.25.8 of this annex which illustrates the hazard areas along with the location of potential new development.

**Table 9.25-1. Growth and Development**

Property or Development Name	Type (e.g. Res., Comm.)	# of Units / Structures	Location (address and/or Parcel ID)	Known Hazard Zone(s)	Description/Status of Development
<b>Recent Development from 2010 to present</b>					
None					
<b>Known or Anticipated Development in the Next Five (5) Years</b>					
Ridgeline Townhomes	Res.	14	Rte. 202 & Hurd Avenue, Garnerville	None	Site plan approved for 14 residential townhomes; approvals have lapsed but development on this site remains viable.

*\* Only location-specific hazard zones or vulnerabilities identified.*

### 9.25.3 Natural Hazard Event History Specific to the Municipality

Rockland County has a history of natural and non-natural hazard events as detailed in Volume I, Section 5.0 of this plan. A summary of historical events is provided in each of the hazard profiles and includes a chronology of events that have affected the County and its municipalities. For the purpose of this plan update, events that

have occurred in the County from 2008 to present were summarized to indicate the range and impact of hazard events in the community. Information regarding specific damages is included, if available, based on reference material or local sources. This information is presented in the table below. For details of these and additional events, refer to Volume I, Section 5.0 of this plan.

**Table 9.25-2. Hazard Event History**

Dates of Event	Event Type (Disaster Declaration if applicable)	Rockland County Designated?	Summary of Damages/Losses
August 10, 2009	Thunderstorms	N/A	\$25,000 in damages throughout County
January 25, 2010	High Wind	N/A	\$100,000 in damages throughout County
December 26-27, 2010	Severe Winter Storm and Snowstorm  DR-1957	Yes	<p>During the incident period of December 26 - 27, 2010, a Severe Winter Storm and Snowstorm disrupted transportation and public safety systems over Rockland County, New York. Roads were closed or severely compromised creating threats to public health and safety; limiting access to medical facilities, schools, food, fuel, utilities and access for police, fire and rescue units. A major disaster was declared on February 18, 2011.</p> <p>The Village of West Haverstraw responded to open and clear roads within the Village. The Department of Public Works (DPW) used 13 Force Account Labor personnel for 288 hours of regular time, 208 hours of overtime hours paid at time and one half, and 32.50 hours of overtime hours paid at double, time for a total of 528.50 labor hours. Force labor personnel conducted emergency clearance of roads in the Village due to excess snow to provide emergency access. Personnel cleared and also placed 120 tons of salt on approximately 51 lane miles and 19 centerline miles of Village roads to reduce and or eliminate hazardous icy conditions of roadways. The DPW used 36 pieces of equipment consisting of trucks, loaders, plows and sanders/salters spreaders, for a total of 655.50 hours while performing emergency clearance and salting of local area roads.</p>
August 1, 2011	Heavy Rain and Flash Flood	N/A	Severe thunderstorms moved across Rockland County, producing flash flooding in some areas. In the Village of West Haverstraw, flash flooding was reported along Route 9W, forcing it to be closed.
August 25 – September 5, 2011	Hurricane Irene  DR-4020	Yes	<p>During the incident period of 08/26/2011 through 09/05/2011, winds, rain and storm surge from Hurricane Irene resulted in severe flooding and other storm related damages in Rockland County, NY. In West Haverstraw many residents had basements that flooded and ruined contents. The heavy rains and wind deposited debris throughout Peck's Pond Park, causing facility/structural damage to softball/baseball field and playground. The storm caused severe flooding to the Garnerville Holding Company Terminal the hamlet of Garnerville. Debris damaged a brick manhole and a 12" cast iron pipe was broken in several locations, causing sanitary sewer line failure.</p>

Dates of Event	Event Type (Disaster Declaration if applicable)	Rockland County Designated?	Summary of Damages/Losses
			<p>Fire dept. equipment such as generators, water pumps, radios, pagers, tools, axes, thermal camera, tire replacement, fire gear cleaning; DPW overtime costs for debris removal, tire repair and replacement, material purchases for preventative maintenance.</p> <p>Emergency Protective Measures were enacted by the West Haverstraw Department of Public Works to protect the life, health and safety of the community. The Department of Public Works cleared debris, assisted police with evacuations of homes, blocked off flooded streets, responded to gas line exposures, and gas leaks and other emergency calls related to Hurricane Irene. Overall costs to the Village from the event were nearly \$150,000.</p>
<p>October 27 – November 8, 2012</p>	<p>Hurricane Sandy DR-4085</p>	<p>Yes</p>	<p>During incident period of 27 October to 8 November 2012, the Village of West Haverstraw was affected by Post-Tropical Storm Sandy. Strong winds and rain began on 28 Oct and continued through 29 October. Hurricane Sandy produced storm conditions of 80 miles per hour winds, resulting in widespread vegetative debris, toppled and uprooted trees deposited along public rights-of-way and causing power outages throughout Village of West Haverstraw. Severe hazards resulted from downed/broken trees and limbs and utility lines and poles. Streets were blocked by fallen trees and broken limbs, presenting an immediate threat to lives, public health and safety. 146.65 tons of vegetative debris was created.</p> <p>Utility outages occurred in several locations throughout the Village. Fencing damage was reported in Calico Hill and Veterans' Memorial Park. Residential and commercial property damage occurred throughout the Village due to downed trees and high winds. Some vehicle damage was reported during debris removal, as well as equipment and gear loss by the Fire Department.</p> <p>Village of West Haverstraw Fire Department personnel responded to numerous emergency response calls to protect public infrastructure and equipment, life, health and imminent dangers to the general public. As a result of having responded to emergency calls throughout the Village, several units of equipment and personal protective equipment used by the Fire Department sustained irreparable damage as a result of water intrusion, or were lost during the performance of emergency responses.</p> <p>In total, DPW emergency protective, response and recovery measures in the Village totaled over \$80,000.</p>
<p>August 8, 2013</p>	<p>Microburst</p>	<p>N/A</p>	<p>Uprooted trees and high winds caused power outages in several locations throughout the W. Haverstraw area.</p> <p>A single-family residence on N. Route 9W suffered severe damage from a tree being uprooted, causing irreparable damage. The house had to be demolished. A commercial building at E. Railroad Avenue suffered damage when the wind tore the steel</p>

Dates of Event	Event Type (Disaster Declaration if applicable)	Rockland County Designated?	Summary of Damages/Losses
			<p>decking off the roof. A building permit was later issued to repair the damage. Another commercial building at S. Route 9W suffered damage when the wind tore trees down causing roof damage.</p> <p>Village staff performed 35 hours of overtime for response to downed trees, wires and debris removal cleanup. 16.39 tons of brush was cleaned up and disposed of at no cost.</p>

Notes:

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

### 9.25.4 Hazard Vulnerabilities and Ranking

The hazard profiles in Section 5.0 of this plan have detailed information regarding each plan participant’s vulnerability to the identified hazards. The following summarizes the hazard vulnerabilities and their ranking in the Village of West Haverstraw. For additional vulnerability information relevant to this jurisdiction, refer to Section 5.0.

#### Natural Hazard Risk/Vulnerability Risk Ranking

The table below summarizes the hazard risk/vulnerability rankings of potential natural hazards for the Village of West Haverstraw.

**Table 9.25-3. Hazard Risk/Vulnerability Risk Ranking**

Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard <sup>a, c</sup>		Probability of Occurrence	Risk Ranking Score (Probability x Impact)	Hazard Ranking <sup>b</sup>
Drought	Damage estimate not available		Frequent	39	High
Earthquake	100-Year GBS:	\$110,039	Occasional	32	High
	500-Year GBS:	\$4,069,013			
	2,500-Year GBS:	\$50,942,575			
Extreme Temperature	Damage estimate not available		Frequent	27	Medium
Flood	1% Annual Chance:	\$37,014,000	Frequent	36	High
Landslide	RCV Exposed:	\$291,552,000	Occasional	24	Medium
Severe Storm	100-Year MRP:	\$425,880	Frequent	48	High
	500-year MRP:	\$1,647,222			
	Annualized:	\$28,665			
Winter Storm	1% GBS:	\$9,854,450	Frequent	51	High
	5% GBS:	\$49,272,250			
Wildfire	Estimated Value in the WUI:	\$1,560,579,000	Frequent	54	High

Notes:

- a. Building damage ratio estimates based on FEMA 386-2 (August 2001)
- b. The valuation of general building stock and loss estimates was based on custom inventory for the municipality.
- High = Total hazard priority risk ranking score of 31 and above
- Medium = Total hazard priority risk ranking of 20-30+



- Low = Total hazard risk ranking below 20
- c. Loss estimates for the severe storm and severe winter storm hazards are structural values only and do not include the value of contents.
  - d. Loss estimates for the flood and earthquake hazards represent both structure and contents.
  - e. The HAZUS-MH earthquake model results are reported by Census Tract.

### National Flood Insurance Program (NFIP) Summary

The following table summarizes the NFIP statistics for the Village of West Haverstraw.

**Table 9.25-4. NFIP Summary**

Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 100-year Boundary (3)
Village of West Haverstraw	22	19	\$3,919,162	0	0	18

Source: FEMA Region 2, 2016

(1) Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA Region 2, and are current as of 06/30/2016. The total number of repetitive loss properties does not include the severe repetitive loss properties. The number of claims represents claims closed by 06/30/16.

(2) Total building and content losses from the claims file provided by FEMA Region 2.

(3) The policies inside and outside of the flood zones is based on the latitude and longitude provided by FEMA Region 2 in the policy file.

Notes: FEMA noted that where there is more than one entry for a property, there may be more than one policy in force or more than one GIS possibility. A zero percentage denotes less than 1/100th percentage and not zero damages or vulnerability as may be the case. Number of policies and claims and claims total exclude properties located outside county boundary, based on provided latitude and longitude.

### Critical Facilities

The table below presents the critical facilities identified in the HMP that are located in the FEMA-delineated 1- and/or 0.2-percent annual chance floodplain. The table also summarizes the Hazards United States (HAZUS) – Multi-Hazards (MH) damage estimates (if any) to each critical facility as a result of the 1-percent annual chance flood event.

**Table 9.25-5. Potential Flood Losses to Critical Facilities**

Name	Type	Exposure		Potential Loss from 1% Flood Event	
		1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage
Well #1	West Haverstraw Village	Well	X	X	-

Source: Hazus-MH 3.2, Rockland County

Note: Due to the sensitive nature of the location of potable wells, a general listing is provided in the above table.

### Other Vulnerabilities Identified

The municipality has identified the following vulnerabilities within their community:

- 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.
- The following dams are located within the Village.

Dam Name	Municipality	River/Stream	Owner	Storage (Acre-Feet)	Hazard Potential USACE / NYSDEC
Rockland Print Co Dam	West Haverstraw	Tr-Minisceongo Creek	Garnerville Holding Company	5	S/L
Rockland Print Co Dam #2	West Haverstraw	Minisceongo Creek	Garnerville Holding Company	5	S/L

### 9.25.5 Capability Assessment

This section identifies the following capabilities of the local jurisdiction:

- Planning and regulatory capability
- Administrative and technical capability
- Fiscal capability
- Community classification
- National Flood Insurance Program
- Integration of mitigation planning into existing and future planning mechanisms

### Planning and Regulatory Capability

The table below summarizes the regulatory tools that are available to the Village of West Haverstraw.

**Table 9.25-6. Planning and Regulatory Tools**

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
<b>Planning Capability</b>				
Master Plan	Yes, 1980	Local	Planning Board	Village Code/Comprehensive Plan
Capital Improvements Plan	No	-	-	-
Floodplain Management / Basin Plan	Yes	Co. & Local	Building Dept./Building Inspector	Village Code (Chapter 112 “Flood Damage Prevention)
Stormwater Management Plan	Yes	Local	Village Consulting Engineer	Village Code (Chapter 202 “Stormwater Management”)
Open Space Plan	Yes	Local	Village Board/Planning Board	Village Zoning Code (Chapter 250, Article IV, Sect. 250-15.2 Zoning/Open Space Conservation District)
Stream Corridor Management Plan	No	-	-	-
Watershed Management or Protection Plan	No	-	-	-
Economic Development Plan	No	-	-	-
Comprehensive Emergency Management Plan	No	-	-	-
Emergency Operation Plan	Yes	Local	Village Board	Adopted April, 2016
Post-Disaster Recovery Plan	No	-	-	-

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
Transportation Plan	No	-	-	-
Strategic Recovery Planning Report	No	-	-	-
Other Plans:	Yes	-	-	ISO Fire Protection Classification is Class 3
<b>Regulatory Capability</b>				
Building Code	Yes	State & Local	NY State, Village Building Department	NYS Uniform Fire Prevention and Building Code See Village Code Chapter 84: Building Construction; Chapter 250, Zoning, Planning and Building; and Chapter 107, Fire Prevention.
Zoning Ordinance	Yes	Local	Planning Board, Zoning Board of Appeals, Building Department	Village Code Chapter 250: Zoning, Planning and Building, adopted 1997
Subdivision Ordinance	Yes	Local	Planning Board, Building Department	Village Code Chapter 250: Zoning, Planning and Building, adopted 1997
NFIP Flood Damage Prevention Ordinance	Yes	Federal, State, Local	Fred Viohl, Building Inspector	Village Code Chapter 112: Flood Damage Prevention, adopted 2014
NFIP: Cumulative Substantial Damages	No	-	-	-
NFIP: Freeboard	Yes	State, Local	Building Inspector	State mandated BFE+2 for single and two-family residential construction, BFE+1 for all other construction types
Growth Management Ordinances	No	-	-	-
Site Plan Review Requirements	Yes	Local	Planning Board	Village Code Chapter 250: Zoning, Planning and Building, adopted 1997
Stormwater Management Ordinance	Yes	Local	P. Joseph Corless, Village Engineer	Chapter 202 Village Code - Article II: Erosion and Sediment Control, adopted 2007
Municipal Separate Storm Sewer System (MS4)	Yes	Local, State	Stormwater Management Officer/Village Consulting Engineer and other designees	Chapter 202 Village Code - Article I: Illicit Discharges, Activities and Connections to Storm Sewer, adopted 2006; Statewide SPDES General Permit
Natural Hazard Ordinance	No	-	-	-
Post-Disaster Recovery Ordinance	No	-	-	-
Real Estate Disclosure Requirement	Yes	State	-	NYS mandate, Property Condition Disclosure Act, NY Code - Article 14 §460-467
Other (Special Purpose Ordinances [i.e., sensitive areas,	Yes	Local	Planning Board/Building	Special Purpose Ordinance; Village Code: Article 93 "Community

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
steep slope])			Department/ Fire Inspector	Forestry” and others

### Administrative and Technical Capability

The table below summarizes potential staff and personnel resources available to the Village of West Haverstraw.

**Table 9.25-7. Administrative and Technical Capabilities**

Resources	Is this in place? (Yes or No)	Department/ Agency/Position
<b>Administrative Capability</b>		
Planning Board	Yes	Planning Board, Mayor/Board of Trustees
Mitigation Planning Committee	No	-
Environmental Board/Commission	No	-
Open Space Board/Committee	No	-
Economic Development Commission/Committee	No	-
Maintenance programs to reduce risk	No	-
Mutual aid agreements	Yes	West Haverstraw Fire Department
<b>Technical/Staffing Capability</b>		
Planner(s) or engineer(s) with knowledge of land development and land management practices	Yes	Sub-contractors
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	Yes	Sub-contractors
Planners or engineers with an understanding of natural hazards	Yes	Sub-contractors
NFIP Floodplain Administrator (FPA)	Yes	Fred Viohl, Building Inspector, and Village Engineer
Surveyor(s)	No	-
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	Yes	Engineer/Building Dept.
Scientist familiar with natural hazards	Yes	Engineer
Emergency Manager	No	-
Grant writer(s)	No	Depending upon the nature of the grant application, the Village prepares such applications in house or with the assistance of outside grant writers.
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

### Fiscal Capability

The table below summarizes financial resources available to the Village of West Haverstraw.



**Table 9.25-8. Fiscal Capabilities**

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

**Community Classifications**

The table below summarizes classifications for community program available to the Village of West Haverstraw.

**Table 9.25-9. Community Classifications**

Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	Yes	In-service training	Every year
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	3	-
NYSDEC Climate Smart Community	No	-	-
Storm Ready Certification	No	-	-
Firewise Communities classification	No	-	-
Natural disaster/safety programs in/for schools	No	-	-
Organizations with mitigation focus (advocacy group, non-government)	No	-	-
Public education program/outreach (through website, social media)	Yes	N/A	N/A
Public-private partnership initiatives addressing disaster-related issues	No	-	-

Note:

- N/A Not applicable
- NP Not participating
- Unavailable

The classifications listed above relate to the community’s ability to provide effective services to lessen its vulnerability to the hazards identified. These classifications can be viewed as a gauge of the community’s



capabilities in all phases of emergency management (preparedness, response, recovery and mitigation) and are used as an underwriting parameter for determining the costs of various forms of insurance. The CRS class applies to flood insurance while the BCEGS and Public Protection classifications apply to standard property insurance. CRS classifications range on a scale of 1 to 10 with class 1 being the best possible classification, and class 10 representing no classification benefit. Firewise classifications include a higher classification when the subject property is located beyond 1000 feet of a creditable fire hydrant and is within 5 road miles of a recognized Fire Station.

Criteria for classification credits are outlined in the following documents:

- The Community Rating System Coordinators Manual
- The Building Code Effectiveness Grading Schedule
- The ISO Mitigation online ISO’s Public Protection website at <https://www.isomitigation.com/ppc/>
- The National Weather Service Storm Ready website at <http://www.stormready.noaa.gov/index.html>
- The National Firewise Communities website at <http://firewise.org/>

**Self-Assessment of Capability**

The table below provides an approximate measure of the Village of West Haverstraw’s capability to work in a hazard-mitigation capacity and/or effectively implement hazard mitigation strategies to reduce hazard vulnerabilities.

**Table 9.25-10. Self-Assessment Capability for the Municipality**

Area	Degree of Hazard Mitigation Capability		
	Limited (If limited, what are your obstacles?)*	Moderate	High
Planning and regulatory capability		X	
Administrative and technical capability		X	
Fiscal capability	X – limited by relatively small tax base to fund measures and staffing beyond those that exist		
Community political capability			X
Community resiliency capability		X	
Capability to integrate mitigation into municipal processes and activities		X	

**National Flood Insurance Program**

**NFIP Floodplain Administrator (FPA)**

Fred Viohl, Building Inspector

**Flood Vulnerability Summary**

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. Approximately ten residential and ten industrial buildings in the Village were damaged by recent storms. No Village residents have approached the FPA with interest in mitigation activities, and the FPA is unaware of any residents currently in the process of mitigation.

## Resources

---

The current FPA is the sole person assuming the responsibilities of floodplain administration, but would pull in additional contracted staff P. Joseph Corless, Village Engineer, if needed. 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.

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.

## Compliance History

---

The village is in good standing with the NFIP. In January 2014, the Village timely adopted a “Flood Damage Prevention” local law, as Chapter 112 to the Village Code, providing for required permitting and mitigation measures relating to properties within the flood plain, sufficient to maintain the eligibility of Village properties for floodplain insurance. The local law was reviewed and approved by a representative of the N.Y.S. DEC, Bureau of Flood Protection and Dam Safety.

As of June 30, 2016, there are 22 policies in force in the Village of West Haverstraw, 18 of which are in the 100-yr flood boundary. There are no repetitive loss or severe repetitive loss properties in the Village. Since 1978, 19 claims have been paid totaling \$3,919,162. Another 7 claims were closed without payment. According to the NFIP Policy Statistics report, the policies in the Village insure approximately \$7,451,700 of property with total annual insurance premiums of \$51,735.

The most recent compliance audit was completed in April, 2015.

## Regulatory

---

The Village Flood Damage Prevention Local Law No. 1 of 2014, embodied in Chapter 112 of the Village Code, includes the adoption of “Advisory Base Flood Elevations”. As such, the Village’s floodplain management regulations exceed the FEMA and NYS minimum requirements. Although not specifically detailed in the zoning and planning regulations administered by the Village ZBA and Planning Boards, the Boards do consider flood risk and flood risk mitigation when reviewing any application for subdivision, site plan, variance, special permit or other appeal (in the case of the ZBA).

Moreover, with respect to variance requests from the construction standards specifically applicable to floodplain properties, the ZBA, pursuant to Chapter 112, at § 112-14, is the regulatory body to which all such appeals are made.

The community would consider joining the Community Rating System (CRS) program to reduce flood insurance premiums for their insured, and would attend a CRS seminar if offered locally.

## Integration of Hazard Mitigation into Existing and Future Planning Mechanisms

---

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day local government operations. As part of this planning effort, each community was surveyed to obtain a better understanding of their community’s progress in plan integration. A summary is provided below. In

addition, the community identified specific integration activities that will be incorporated into municipal procedures.

### Planning

---

**Village Comprehensive Plan:** The Village adopted a Comprehensive Plan in the 1980's, but the plan has never been updated. The plan does not focus on areas of natural hazard risk (e.g. flood-prone areas, steep slopes), nor does it refer to a local or Countywide Hazard Mitigation Plan.

Village zoning, subdivision regulations, and site plan review process consider natural hazard risk (e.g. the presence of floodplains, steep slopes, etc.). The village conducts regular reviews of existing local codes and ordinances against the identified hazards to determine whether there needs to be any amendments to address identified hazards and, where a need is identified, modify/amend the codes/ordinances as applicable. Furthermore, the Planning Board and/or ZBA is supported by opinions of Rockland County Planning Department, the Village Engineer, and a planning consultant as needed to inform their decision making processes. The Village relies on a contract planning firm for plan review and to assist in identifying relevant natural hazard risk issues and opportunities for risk reduction.

### Regulatory and Enforcement (Ordinances)

---

Through enforcement of its zoning, flood damage prevention, and stormwater ordinances, the Village implements best management practices for floodplain areas. The Village's Flood Hazard Mitigation law incorporates the Advisory Base Flood Elevations. The village has adopted stormwater regulations and does enforce them, along with NYS and local building codes. The village is an MS4 Regulated Community, and has a formal Stormwater Management Plan specifying projects/actions/initiatives to reduce the volume of stormwater, or otherwise mitigate stormwater flooding.

**Zoning:** The Zoning Board of Appeals is the board to which appeals from the determinations of the Local Administrator, who administers and implements the Flood Damage Prevention Law, are made, and which is authorized to grant variances from the requirements of the law.

### Operational and Administration

---

The Village installed new backup generators at the Village Hall, DPW facility, and SWJ fire house in 2015.

Village staff participates in training as applicable and made available through the County or other professional organizations (i.e., Highway Superintendents association). The Village Commissioner of Public Works participates in informal meetings of the Highway Superintendents' Association, and in other programs as may be made available. Village staff would benefit from additional training and/or certification with respect to climate change and its impact on water levels.

### Funding

---

**Operating Budget:** The municipal budget is posted online. It contains line items including road/infrastructure improvements, snow/ice removal, and capital improvements, however it does not specifically include line items designated as mitigation projects/activities. The village receives the largest share of its revenue from real property tax, followed non-property taxes and state aid, including CHIPS funding.

**Grants:** The 2015-2016 Village budget included revenue line items totaling over \$300,000 in state aid, but it has not been awarded grant funds for mitigation-related projects.

### Education and Outreach

---

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.

Disaster Land is a web-based emergency management software system used by Rockland County. The municipalities are granted access to Disaster Land where flood inundation zones are incorporated. All municipal Emergency Coordinators have access to this 24/7 on smart phone/laptop/desktop.

Rockland County utilizes NY-Alert (<https://www.nyalert.gov/>) and CodeRed (Community Notification System; the backup to NY-Alert) for emergency notifications; all Towns and Villages have access to it. There is a mailbox for known flood inundation areas to target outreach as needed; and have license for FEMA's Integrated Public Alert & Warning System (IPAWS) to send out notifications.

Rockland County provides Towns and Villages palm-cards on winter storms; information regarding flooding; hurricane; high-winds, tornadoes via email and social media (Twitter and Facebook). Rockland County also has a pamphlet organizer with safety tips on various hazards. At the Village's request the County will speak to an organization/school/non-profit on emergency preparedness and mitigation.

### 9.25.6 Mitigation Strategy and Prioritization

---

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and prioritization.

#### Past Mitigation Initiative Status

---

The following table indicates progress on the community's mitigation strategy identified in the 2010 Plan. Actions that are carried forward as part of this plan update are included in the following subsection in its own table with prioritization. Previous actions that are now on-going programs and capabilities are indicated as such in the following table and may also be found under 'Capability Assessment' presented previously in this annex.

Table 9.25-11. Status of Previous Mitigation Actions

2010 Mitigation Action	Responsible Party	Status (In progress, No progress, Complete)	Describe Status	Next Step (Include in 2018 HMP or Discontinue)	Describe Next Step
Flooding and erosion of creek at Church St.	DPW	In Progress	1. 0% complete  2. Discussions with the Town of Haverstraw have resulted in a decision to pursue Minesceongo Creek mitigation inter-municipally.	Include in 2018 HMP	Minesceongo flood remediation, coordinated with Town of Haverstraw and Rockland County.
Install new emergency generator to Village Hall and DPW	DPW	Complete	Generator installed Fall 2015	Discontinue	Discontinue
Update emergency generator at SWJ fire house	DPW	Complete	Generator installed Fall 2015	Discontinue	Discontinue
1.B Ensure that local comprehensive plans incorporate natural disaster mitigation techniques through a courtesy review or draft plans by the County Planning Department.	CPG member; Village Trustee	No Progress	1. Funding/staffing impediments	Include in 2018 HMP	Ensure that local comprehensive plans incorporate natural disaster mitigation techniques through a courtesy review or draft plans by the County Planning Department.
2.A Expand and disseminate GIS and other hazard information on the internet.	CPG member; Village Trustee	No Progress	1. Funding/staffing impediments  2. Rockland County has expanded its GIS services; flood inundation zones are on the map web portal and the Towns have access to the portal and this data. The County anticipates continual updates of data being collected and accessed by the Towns (e.g., dam inundation areas).	Include in 2018 HMP	Revise Village website to include relevant links to Rockland County GIS flood hazard and inundation zone maps, as well as other hazard information on the internet.

2010 Mitigation Action	Responsible Party	Status (In progress, No progress, Complete)	Describe Status	Next Step (Include in 2018 HMP or Discontinue)	Describe Next Step
Work with local municipalities to pursue the development of an Emergency Notification System call perimeter for high risk locations of natural hazards with delineable hazard areas. Rockland County staff will make aerial mapping available, along with GIS mapping for natural hazards that was completed as part of the hazard mitigation planning project. The County will also facilitate the utilization of the Emergency Notification System by municipalities.	CPG member; Village Trustee	No Progress	1. Funding/staffing impediments	Include in 2018 HMP	Work with local municipalities to pursue the development of an Emergency Notification System call perimeter for high risk locations of natural hazards with delineable hazard areas.
Hold periodic workshops regarding zoning and planning issues that arise regarding natural hazards and hazard mitigation.	CPG member; Village Trustee	No Progress	1. Funding/staffing impediments	Include in 2018 HMP	Hold periodic workshops regarding zoning and planning issues that arise regarding natural hazards and hazard mitigation.
4.F Continue to implement best management practices for floodplain areas.	CPG member; Village Trustee	In Progress	1. Applications continue to be reviewed.	Discontinue	Ongoing operational capability.
4.G Identify and document repetitively flooded properties. Work with owners to explore mitigation opportunities for repetitively flooded properties, and if appropriate and feasible, carry out acquisition, relocation, elevation and floodproofing measures to protect these properties.	CPG member; Village Trustee	No Progress	1. funding/staffing impediment	Include in 2018 HMP	Identify and document repetitively flooded properties. Work with owners to explore mitigation opportunities for repetitively flooded properties, and if appropriate and feasible, carry out acquisition, relocation, elevation and flood proofing measures to protect these properties.
4.J Develop specific mitigation solutions for floodprone road systems (roads, bridges, intersections, drainage, etc.) under the leadership of County DPW.	CPG member; Village Trustee	No Progress	1. funding/staffing impediment	Discontinue	N/A

2010 Mitigation Action	Responsible Party	Status (In progress, No progress, Complete)	Describe Status	Next Step (Include in 2018 HMP or Discontinue)	Describe Next Step
13.A 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.	CPG member; Village Trustee	No Progress	1. funding/staffing impediment	Include in 2018 HMP	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.
11.B Review existing emergency response plans for enhancement opportunities: work with social support agencies, homeowners associations and general public to develop and implement monitoring and warning systems focused on vulnerable populations and provision of adequate shelter facilities.	CPG member; Village Trustee	In Progress	<ol style="list-style-type: none"> <li>1. An Emergency Operations coordinated response with neighboring municipalities continues work to develop a plan.</li> <li>2. Rockland County provides Towns and Villages palm-cards on winter storms; information regarding flooding; hurricane; high-winds, tornadoes via email and social media (Twitter and Facebook). Rockland County also has a pamphlet organizer with safety tips on various hazards. At the Village's request the County will speak to an organization/school/non-profit on emergency preparedness and mitigation.</li> </ol>	Include in 2018 HMP	Complete an Emergency Operations Coordinated Response Plan, currently under development with neighboring municipalities.
Public awareness program on hazards, prevention and mitigation: assist CPG Chairperson in maintenance of mitigation planning web presence; assist CPG Chairperson in preparation	RCOFES lead with direct participation and	No Progress	1. funding/staffing impediment	Include in 2018 HMP	Develop new Village website. 2017-2019. Public awareness program on hazards, prevention and mitigation best achieved through regular and



2010 Mitigation Action	Responsible Party	Status (In progress, No progress, Complete)	Describe Status	Next Step (Include in 2018 HMP or Discontinue)	Describe Next Step
of annual hazards and mitigation planning fact sheet and its distribution; assist CPG chairperson in preparation of hazards survey; periodic discussion of hazard mitigation and the mitigation plan at other regular local meetings; use of annual flyers, newsletters, advertisements, or radio/TV announcements, etc. at the discretion of the jurisdiction (incorporating as much free information as possible from the FEMA publications warehouse and other appropriate sources.)	involvement form each jurisdiction's CPG member				routine interaction with residents and businesses. This is best achieved through a response website.
Code update: review existing local codes and ordinances against the identified hazards to determine whether there needs to be any amendments to address identified hazards and, where a need is identified; modify/amend the codes/ordinances as applicable.	Each jurisdictional CPG member	Complete	100%	Discontinue	Ongoing operational capability. Village reviews codes constantly as situations arise that need addressing
Code enforcement: enforcement of NYS and local building codes	Each jurisdictional CPG member	Complete	100%	Discontinue	Ongoing operational capability.
Update/revise floodplain management ordinance to comply with latest FEMA regulations	Building Dept.	Complete	100% - Updated in 2014	Discontinue	Ongoing operational capability.
Update/review floodplain management ordinances to be consistent with potential future new FIRMs	Building Dept.	In Progress	100% - Local floodplain management ordinance is updated and consistent with recently released 2014 FIRMs.	Discontinue	Ongoing operational capability.
Join the Community Rating System (CRS)	Building Dept.	No Progress	1. funding/staffing impediment	Discontinue	N/A

### **Proposed Hazard Mitigation Initiatives for the Plan Update**

---

The Village of West Haverstraw participated in a mitigation action workshop in February, 2017 and was provided the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 ‘Selecting Appropriate Mitigation Measures for Floodprone Structures’ (March 2007) and FEMA ‘Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards’ (January 2013).

Table 9.25-12 summarizes the comprehensive-range of specific mitigation initiatives the Village of West Haverstraw would like to pursue in the future to reduce the effects of hazards. Some of these initiatives may be previous actions carried forward for this plan update. These initiatives 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 municipal priorities. Both the four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

As discussed in Section 6, 14 evaluation/prioritization criteria are used to complete the prioritization of mitigation initiatives. For each new mitigation action, a numeric rank is assigned (-1, 0, or 1) for each of the 14 evaluation criteria to assist with prioritizing your actions as ‘High’, ‘Medium’, or ‘Low.’ The table below summarizes the evaluation of each mitigation initiative, listed by Action Number.

Table 9.25-13 provides a summary of the prioritization of all proposed mitigation initiatives for the Plan update.

Table 9.25-12. Proposed Hazard Mitigation Initiatives

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals and Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category	CRS Category
VWH-1	Minesceongo flood remediation, coordinated with Town of Haverstraw and Rockland County.	Both	Flood, severe storm	1, 2	Rockland County Drainage Agency, Village of Haverstraw and West Haverstraw	Property & infrastructure	High > \$100,000	Unknown	Ongoing program	Medium	NSP	NR
VWH-2	Update local comprehensive plan to incorporate natural disaster mitigation techniques, including a courtesy review of draft plans by the County Planning Department.	N/A	All hazards	6, 7	CPG member; Village Trustee	High	Low	Operating Budget	Short Term	High	LPR	PR
VWH-3	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.	N/A	All hazards	3, 5, 7	RCOFES lead with direct participation and involvement from each jurisdiction's CPG member	Medium	Low	Village Operating Budget	Short 2017-2019	High	EAP	PI
VWH-4	Work with local municipalities to pursue the development of an Emergency Notification System call perimeter for high risk locations of natural hazards with delineable hazard areas.	N/A	All hazards	5	Rockland County, CPG member; Village Trustee	Medium	Medium	County, Village Operating Budget	Short 1-5 years	High	EAP	ES
VWH-5	Hold periodic workshops	N/A	All	3	CPG	Medium	Low	Operating	Short Term	Medium	LPR	PR



Table 9.25-12. Proposed Hazard Mitigation Initiatives

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals and Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category	CRS Category
	regarding zoning and planning issues that arise regarding natural hazards and hazard mitigation.		hazards		member; Village Trustee			Budget				
VWH-6	Identify and document repetitively flooded properties. Work with owners to explore mitigation opportunities for repetitively flooded properties, and if appropriate and feasible, carry out acquisition, relocation, elevation and flood proofing measures to protect these properties.	Existing	Flood, severe storm	2, 3, 5	Floodplain manager, Building Department	Medium	Low	Operating Budget	Short Term	High	LPR	PR
VWH-7	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.	Existing	All hazards	2, 5	Building Department	Medium	Low	Village Operating Budget	Short 1-5 years	High	LPR	PR
VWH-8	Complete an Emergency Operations Coordinated Response Plan, currently under development with neighboring municipalities.	N/A	All hazards	5	Village of West Haverstraw, Rockland County	Medium	Low	Village Operating Budget, County OES, NYS DHSES	Short 1-5 years	High	EAP	ES
VWH-9	Provide training and/or certification for Village staff with respect to natural	N/A	All hazards	3, 5	Village of West Haverstraw,	Medium	Low	Village Operating Budget	Short 1-5 years	High	EAP	PI



Table 9.25-12. Proposed Hazard Mitigation Initiatives

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals and Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category	CRS Category
	hazard risk management, climate change and its impact on water levels.				Rockland County							
VWH-10	Drainage Installation at the West Haverstraw Municipal Complex	Existing	Severe storm	2	Village of West Haverstraw	High	Medium	FEMA (HMGP, FMA, PDM), CDBG, NYS DHSES,	2020 Long-term	High	SIP	PP
VWH-11	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". Potential mitigation actions may include the following. The Owner will determine the feasible and cost-effective action to implement. - Dry floodproof and install a backup power supply/generator	Existing	Flood	2	Private property with support from the Village of West Haverstraw	Low	Low	Village Staff Time	Short 1-5 years	Medium	EAP	PR

Table 9.25-12. Proposed Hazard Mitigation Initiatives

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals and Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category	CRS Category
	- Retrofit the structure with a sensor that would seal the well itself off from floodwaters, such as a backflow preventer. Add a backup power supply to make sure it works when the power's out. -Drill a new well outside the floodplain											

Notes:

Not all acronyms and abbreviations defined below are included in the table.

\*Does this mitigation initiative reduce the effects of hazards on new and/or existing buildings and/or infrastructure? Not applicable (N/A) is inserted if this does not apply.

Acronyms and Abbreviations:

CAV	Community Assistance Visit
CRS	Community Rating System
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
FPA	Floodplain Administrator
HMA	Hazard Mitigation Assistance
N/A	Not applicable
NFIP	National Flood Insurance Program
OEM	Office of Emergency Management

Potential FEMA HMA Funding Sources:

FMA	Flood Mitigation Assistance Grant Program
HMGP	Hazard Mitigation Grant Program
PDM	Pre-Disaster Mitigation Grant Program
RFC	Repetitive Flood Claims Grant Program (discontinued in 2015)
SRL	Severe Repetitive Loss Grant Program (discontinued in 2015)

Timeline:

Short	1 to 5 years
Long Term	5 years or greater
OG	On-going program
DOF	Depending on funding

Costs:

Where actual project costs have been reasonably estimated:

Low	< \$10,000
Medium	\$10,000 to \$100,000
High	> \$100,000

Where actual project costs cannot reasonably be established at this time:

Low	Possible to fund under existing budget. Project is part of, or can be part of an existing on-going program.
Medium	Could budget for under existing work plan, but would require a

Benefits:

Where possible, an estimate of project benefits (per FEMA's benefit calculation methodology) has been evaluated against the project costs, and is presented as:

Low=	< \$10,000
Medium	\$10,000 to \$100,000
High	> \$100,000

Where numerical project benefits cannot reasonably be established at this time:

Low	Long-term benefits of the project are difficult to quantify in the short term.
Medium	Project will have a long-term impact on the reduction of risk exposure to



Costs:

reapportionment of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years.

High Would require an increase in revenue via an alternative source (i.e., bonds, grants, fee increases) to implement. Existing funding levels are not adequate to cover the costs of the proposed project.

Benefits:

life and property, or project will provide an immediate reduction in the risk exposure to property.

High Project will have an immediate impact on the reduction of risk exposure to life and property.

Mitigation Category:

- *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 manmade structures to reduce the impact of hazards.
- *Natural Systems Protection (NSP)* – These are actions that minimize damage and losses, and also 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

CRS Category:

- *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 also 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 9.25-13. Summary of Prioritization of Actions

Mitigation Action/Project Number	Mitigation Action/Initiative	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community	Total	High / Medium / Low
VWH-1	Minesceongo flood remediation, coordinated with Town of Haverstraw and Rockland County.	1	1	1	1	1	-1	-1	1	0	-1	1	1	0	0	5	Medium
VWH-2	Update local comprehensive plan to incorporate natural disaster mitigation techniques, including a courtesy review of draft plans by the County Planning Department.	0	1	1	1	0	1	0	1	1	1	1	1	0	1	10	High
VWH-3	Revise and update the Village website to include relevant links to expand and disseminate GIS and other hazard information on the internet	1	1	1	1	0	1	1	0	0	1	1	1	0	0	9	High
VWH-4	Work with local municipalities to pursue the development of an Emergency Notification System call perimeter for high risk locations of natural hazards with delineable hazard areas.	1	0	1	1	0	1	1	0	1	1	1	0	1	0	9	High
VWH-5	Hold periodic	0	1	1	1	0	1	1	0	0	1	1	1	0	0	8	Medium



Mitigation Action/Project Number	Mitigation Action/Initiative	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community	Total	High / Medium / Low
	workshops regarding zoning and planning issues that arise regarding natural hazards and hazard mitigation.																
VWH-6	Identify and document repetitively flooded properties. Work with owners to explore mitigation opportunities for repetitively flooded properties, and if appropriate and feasible, carry out acquisition, relocation, elevation and flood proofing measures to protect these properties.	0	1	1	1	0	1	-1	1	1	1	1	1	0	0	8	High
VWH-7	Determine the year built and level of protection for critical emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide some degree of protection from natural hazards, and pursue potential mitigation opportunities to protect these sites as funding becomes available.	1	1	1	1	0	1	1	1	0	1	1	1	0	0	10	High
VWH-8	Complete an	1	1	1	1	0	0	1	0	1	1	1	1	0	0	9	High



Mitigation Action/Project Number	Mitigation Action/Initiative	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community	Total	High / Medium / Low
	Emergency Operations Coordinated Response Plan, currently under development with neighboring municipalities.																
VWH-9	Provide training and/or certification for Village staff with respect to natural hazard risk management, climate change and its impact on water levels.	0	1	1	1	0	1	1	1	0	1	1	1	0	0	9	High
VWH-10	Drainage Installation at the West Haverstraw Municipal Complex	0	1	1	1	1	1	0	0	1	1	0	0	1	1	9	High
VWH-11	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	0	1	1	1	0	1	1	0	0	1	0	1	0	0	7	Medium



Mitigation Action/Project Number	Mitigation Action/Initiative	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community	Total	High / Medium / Low	
	<p>will also indicate NYS requires mitigation address the 500-year flood event or "worst damage scenario". Potential mitigation actions may include the following. The Owner will determine the feasible and cost-effective action to implement.</p> <ul style="list-style-type: none"> <li>- Dry floodproof and install a backup power supply/generator</li> <li>- Retrofit the structure with a sensor that would seal the well itself off from floodwaters, such as a backflow preventer. Add a backup power supply to make sure it works when the power's out.</li> <li>-Drill a new well outside the floodplain</li> </ul>																	

Note: Refer to Section 6, which conveys guidance on prioritizing mitigation actions.

---

### 9.25.7 Future Needs To Better Understand Risk/Vulnerability

---

None at this time.

### 9.25.8 Hazard Area Extent and Location

---

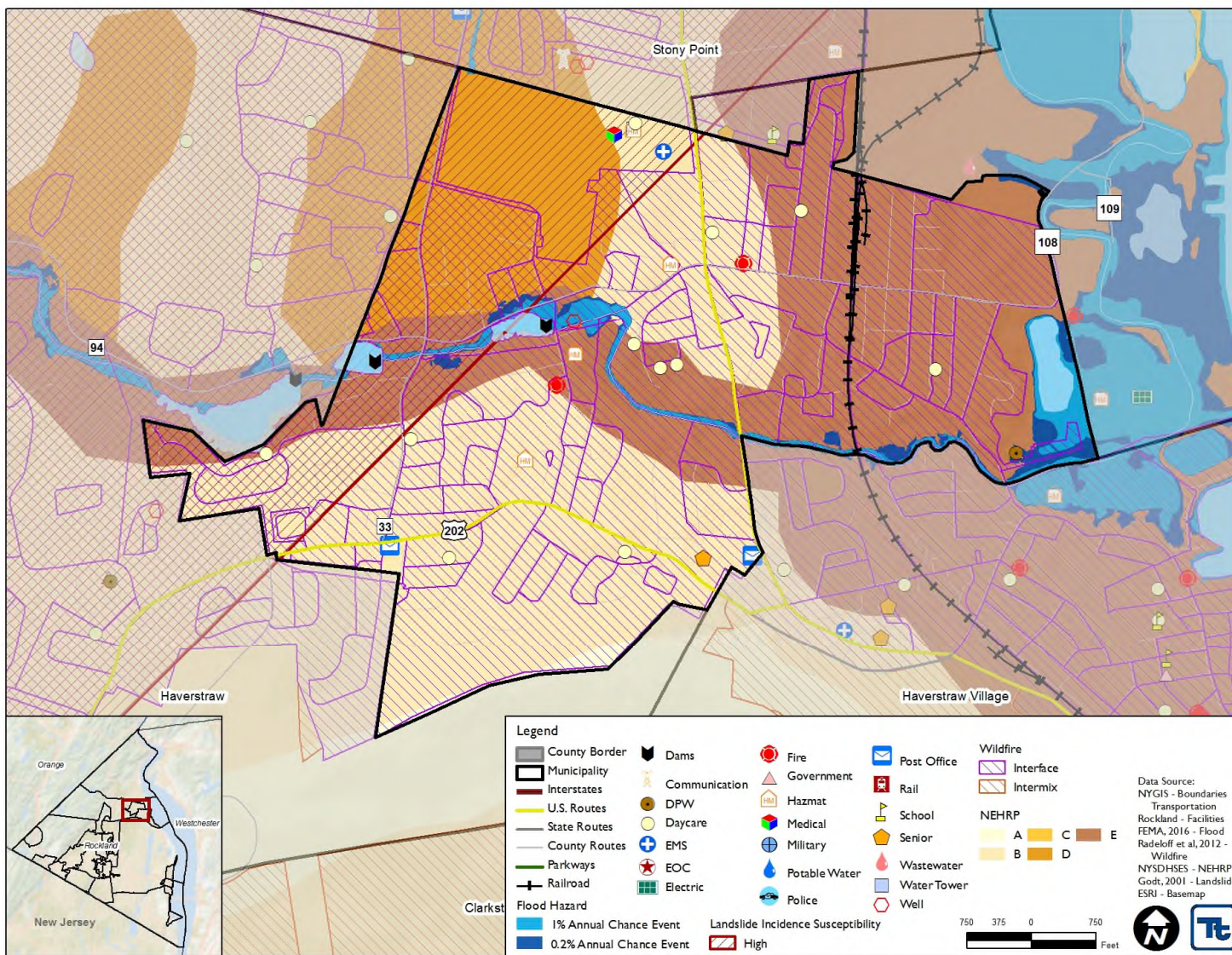
Hazard area extent and location maps have been generated for the Village of West Haverstraw that illustrate the probable areas impacted within the municipality. These maps are based on the best available data at the time of the preparation of this plan, and are considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the Village of West Haverstraw has significant exposure. These maps are illustrated in the hazard profiles within Section 5.4, Volume I of this Plan.

### 9.25.9 Additional Comments

---

None at this time.

Figure 9.25-1. Village of West Haverstraw Hazard Area Extent and Location Map



**9.25.10 ACTION WORKSHEETS**

<b>Name of Jurisdiction:</b>	Village of West Haverstraw
<b>Name and Title Completing Worksheet:</b>	
<b>Action Number:</b>	VWH-1
<b>Mitigation Action Name:</b>	Minesceongo flood remediation

Assessing the Risk	
<b>Hazard(s) addressed:</b>	Flash Flooding
<b>Specific problem being mitigated:</b>	Stream Flow
Evaluation of Potential Actions/Projects	
<b>Actions/Projects Considered (name of project and reason for not selecting):</b>	Minesceongo flood remediation, coordinated with Town of Haverstraw and Rockland County. No action – problem continues Buyout properties impacted by flooding from Minesceongo - costly
Action/Project Intended for Implementation	
<b>Description of Selected Action/Project</b>	
<b>Mitigation Action Type</b>	Natural Systems Project
<b>Goals Met</b>	Protect Life and Property
<b>Applies to existing and or new development, or not applicable</b>	Existing & possible new
<b>Benefits (losses avoided)</b>	Property & Infrastructure
<b>Estimated Cost</b>	High > 100,000
<b>Priority*</b>	High
Plan for Implementation	
<b>Responsible Organization</b>	Rockland County
<b>Local Planning Mechanism</b>	Rockland County Drainage Agency
<b>Potential Funding Sources</b>	Unknown
<b>Timeline for Completion</b>	Ongoing program
Reporting on Progress	
<b>Date of Status Report/ Report of Progress</b>	Date: Progress on Action/Project:

Action Number:

VWH-1

Mitigation Action Name:

Minisceongo Stream Maintenance

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	-1	Jurisdiction is Rockland County responsibility
Fiscal	-1	Jurisdiction is Rockland County responsibility
Environmental	1	
Social	0	
Administrative	-1	Rockland County Responsibility
Multi-Hazard	1	
Timeline	1	Up to Rockland County
Agency Champion	0	
Other Community Objectives	0	
<b>Total</b>	5	
<b>Priority (H/M/L)</b>	Medium	

**Name of Jurisdiction:** Village of West Haverstraw  
**Name and Title Completing Worksheet:**  
**Action Number:** VWH-2  
**Mitigation Action Name:** Update local comprehensive plan to incorporate natural disaster mitigation techniques.

Assessing the Risk	
<b>Hazard(s) addressed:</b>	All hazards
<b>Specific problem being mitigated:</b>	Current comprehensive plan does not thoroughly incorporate natural disaster mitigation considerations.
Evaluation of Potential Actions/Projects	
<b>Actions/Projects Considered (name of project and reason for not selecting):</b>	Do not update local plans – not preferred Update local plans without integrating hazard mitigation – not preferred
Action/Project Intended for Implementation	
<b>Description of Selected Action/Project</b>	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.
<b>Mitigation Action Type</b>	LPR
<b>Goals Met</b>	6, 7
<b>Applies to existing and or new development, or not applicable</b>	N/A
<b>Benefits (losses avoided)</b>	High
<b>Estimated Cost</b>	Low
<b>Priority*</b>	High
Plan for Implementation	
<b>Responsible Organization</b>	CPG member; Village Trustee
<b>Local Planning Mechanism</b>	
<b>Potential Funding Sources</b>	Village Operating Budget, State grants
<b>Timeline for Completion</b>	Short-term
Reporting on Progress	
<b>Date of Status Report/ Report of Progress</b>	Date: Progress on Action/Project:



Action Number:

VWH-2

Mitigation Action Name:

Update local comprehensive plan to incorporate natural disaster mitigation techniques.

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
<b>Life Safety</b>	0	
<b>Property Protection</b>	1	Integrating hazards and vulnerabilities into other plans will ensure development occurs in safer areas
<b>Cost-Effectiveness</b>	1	Planning is a low cost, proactive solution
<b>Technical</b>	1	Technically feasible
<b>Political</b>	0	
<b>Legal</b>	1	
<b>Fiscal</b>	0	May require grant funding to support local budget
<b>Environmental</b>	1	Both comp plans and LWR plans consider environmental quality
<b>Social</b>	1	Comp plans and LWR plans consider the needs of all residents
<b>Administrative</b>	1	Village has administrative capability to implement
<b>Multi-Hazard</b>	1	All hazards
<b>Timeline</b>	1	Short-term
<b>Agency Champion</b>	0	
<b>Other Community Objectives</b>	1	Meets goals in multiple planning areas, outside of hazard mitigation
<b>Total</b>	10	
<b>Priority (H/M/L)</b>	High	

**Name of Jurisdiction:** Village of Haverstraw

**Name and Title Completing Worksheet:**

**Action Number:** VWH-3

**Mitigation Action Name:** Revise and update the Village website to include relevant links to expand and disseminate GIS and other hazard information on the internet

Assessing the Risk	
<b>Hazard(s) addressed:</b>	All hazards
<b>Specific problem being mitigated:</b>	Need for a village website that is current and linked to available resources
Evaluation of Potential Actions/Projects	
<b>Actions/Projects Considered (name of project and reason for not selecting):</b>	Do not update website – not preferred Update website without linking to other resources – not preferred
Action/Project Intended for Implementation	
<b>Description of Selected Action/Project</b>	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.
<b>Mitigation Action Type</b>	EAP
<b>Goals Met</b>	3, 5
<b>Applies to existing and or new development, or not applicable</b>	N/A
<b>Benefits (losses avoided)</b>	Medium
<b>Estimated Cost</b>	Low
<b>Priority*</b>	High
Plan for Implementation	
<b>Responsible Organization</b>	RCOFES lead with direct participation and involvement from each jurisdiction’s CPG member
<b>Local Planning Mechanism</b>	
<b>Potential Funding Sources</b>	Village Operating Budget
<b>Timeline for Completion</b>	Short-term, 2017-2019
Reporting on Progress	
<b>Date of Status Report/</b>	Date:

<b>Report of Progress</b>	Progress on Action/Project:
---------------------------	-----------------------------

**Action Number:** VWH-3

---

**Mitigation Action Name:** Develop new Village website.

---

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
<b>Life Safety</b>	1	Make residents better informed on how to protect themselves, their families, and their property from natural hazards.
<b>Property Protection</b>	1	Make residents better informed on how to protect themselves, their families, and their property from natural hazards.
<b>Cost-Effectiveness</b>	1	Low cost solution
<b>Technical</b>	1	Technically feasible
<b>Political</b>	0	
<b>Legal</b>	1	Village has legal authority to post to its own website, and to use FEMA-published materials
<b>Fiscal</b>	1	Staff-time or Village budget to hire web designer
<b>Environmental</b>	0	
<b>Social</b>	0	Will reach a large segment of the population, but not benefit those without access to internet
<b>Administrative</b>	1	Village has administrative capability to implement
<b>Multi-Hazard</b>	1	All hazards
<b>Timeline</b>	1	Short-term, 2017-2019
<b>Agency Champion</b>	0	
<b>Other Community Objectives</b>	0	
<b>Total</b>	9	
<b>Priority (H/M/L)</b>	High	

**Name of Jurisdiction:** Village of West Haverstraw

**Name and Title Completing Worksheet:** \_\_\_\_\_

**Action Number:** VWH-4

**Mitigation Action Name:** Develop Emergency Notification System call perimeter for high risk locations

Assessing the Risk	
<b>Hazard(s) addressed:</b>	All hazards
<b>Specific problem being mitigated:</b>	High risk locations often lack or have limited connectivity to real-time disaster warning and emergency notifications
Evaluation of Potential Actions/Projects	
<b>Actions/Projects Considered (name of project and reason for not selecting):</b>	Do nothing – vulnerability continues Deploy mobile signs in hazard areas during hazard events – not efficient
Action/Project Intended for Implementation	
<b>Description of Selected Action/Project</b>	Work with local municipalities to pursue the development of an Emergency Notification System call perimeter for high risk locations of natural hazards with delineable hazard areas.
<b>Mitigation Action Type</b>	EAP
<b>Goals Met</b>	5
<b>Applies to existing and or new development, or not applicable</b>	N/A
<b>Benefits (losses avoided)</b>	Medium
<b>Estimated Cost</b>	Medium
<b>Priority*</b>	High
Plan for Implementation	
<b>Responsible Organization</b>	Rockland County, CPG member; Village Trustee
<b>Local Planning Mechanism</b>	
<b>Potential Funding Sources</b>	County, Village Operating Budget
<b>Timeline for Completion</b>	Short 1-5 years
Reporting on Progress	
<b>Date of Status Report/ Report of Progress</b>	Date: Progress on Action/Project:

**Action Number:**

VWH-4

**Mitigation Action Name:**

Work with local municipalities to pursue the development of an Emergency Notification System call perimeter for high risk locations of natural hazards with delineable hazard areas.

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
<b>Life Safety</b>	1	Help notify and prepare vulnerable and remote populations during an emergency
<b>Property Protection</b>	0	
<b>Cost-Effectiveness</b>	1	If some system is already in place, expanding the radius will be relatively low cost.
<b>Technical</b>	1	Technically feasible
<b>Political</b>	0	
<b>Legal</b>	1	Village has legal authority to implement
<b>Fiscal</b>	1	Operating budget, in-kind support from county partners
<b>Environmental</b>	0	
<b>Social</b>	1	Benefits vulnerable populations
<b>Administrative</b>	1	Village has administrative capability to implement
<b>Multi-Hazard</b>	1	All hazards
<b>Timeline</b>	1	Short-term
<b>Agency Champion</b>	0	
<b>Other Community Objectives</b>	0	
<b>Total</b>	9	
<b>Priority (H/M/L)</b>	High	

**Name of Jurisdiction:** Village of West Haverstraw

**Name and Title Completing Worksheet:** \_\_\_\_\_

**Action Number:** VWH-5

**Mitigation Action Name:** Hold periodic workshops regarding zoning and planning issues that arise regarding natural hazards and hazard mitigation.

Assessing the Risk	
<b>Hazard(s) addressed:</b>	All hazards
<b>Specific problem being mitigated:</b>	Increase institutional understanding and programmatic consideration of hazard mitigation
Evaluation of Potential Actions/Projects	
<b>Actions/Projects Considered (name of project and reason for not selecting):</b>	Do not hold workshops – mitigation measures continue to be left out of planning and zoning decisions – not preferred Hold a single workshop – not preferred because village staff and board members fluctuate over the years, so it is important to routinely train new members and refresh training for existing members
Action/Project Intended for Implementation	
<b>Description of Selected Action/Project</b>	Hold periodic workshops regarding zoning and planning issues that arise regarding natural hazards and hazard mitigation.
<b>Mitigation Action Type</b>	LPR
<b>Goals Met</b>	3, 7
<b>Applies to existing and or new development, or not applicable</b>	N/A
<b>Benefits (losses avoided)</b>	Medium
<b>Estimated Cost</b>	Low
<b>Priority*</b>	Medium
Plan for Implementation	
<b>Responsible Organization</b>	Rockland County, CPG member; Village Trustee
<b>Local Planning Mechanism</b>	
<b>Potential Funding Sources</b>	Village Operating Budget
<b>Timeline for Completion</b>	Short-term
Reporting on Progress	
<b>Date of Status Report/ Report of Progress</b>	Date: Progress on Action/Project:

Action Number:

VWH-5

Mitigation Action Name:

Hold periodic workshops regarding zoning and planning issues that arise regarding natural hazards and hazard mitigation.

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	Make village staff, board members, and residents better informed on how to incorporate natural hazard mitigation into other regulatory decisions and actions to minimize future property damage
Cost-Effectiveness	1	Workshops are relatively low cost. Potential to harness county or state resources to host
Technical	1	Technically feasible
Political	0	
Legal	1	Village has legal authority to hold workshops
Fiscal	1	Operating budget, in-kind support from regional partners
Environmental	0	
Social	0	
Administrative	1	Village has administrative capability to implement
Multi-Hazard	1	All hazards
Timeline	1	Short-term
Agency Champion	0	
Other Community Objectives	0	
<b>Total</b>	<b>8</b>	
<b>Priority (H/M/L)</b>	<b>Medium</b>	



**Name of Jurisdiction:** Village of West Haverstraw  
**Name and Title Completing Worksheet:**  
**Action Number:** VWH-6  
**Mitigation Action Name:** Identify and document repetitively flooded properties.

Assessing the Risk	
<b>Hazard(s) addressed:</b>	Flood, severe storm
<b>Specific problem being mitigated:</b>	Flood damage to property
Evaluation of Potential Actions/Projects	
<b>Actions/Projects Considered (name of project and reason for not selecting):</b>	Do not reach out to owners – not preferred. Some property owners who may be interested in mitigation, but don't understand her/his options regarding financial and technical assistance, may never undertake mitigation actions Do not mitigate properties at risk – not preferred, vulnerability continues
Action/Project Intended for Implementation	
<b>Description of Selected Action/Project</b>	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.
<b>Mitigation Action Type</b>	LPR (potential to be SIP)
<b>Goals Met</b>	Protect property, facilities and infrastructure
<b>Applies to existing and or new development, or not applicable</b>	Existing
<b>Benefits (losses avoided)</b>	Property & Infrastructure
<b>Estimated Cost</b>	Medium
<b>Priority*</b>	High
Plan for Implementation	
<b>Responsible Organization</b>	Village Floodplain manager, Building Department
<b>Local Planning Mechanism</b>	
<b>Potential Funding Sources</b>	Village Operating Budget
<b>Timeline for Completion</b>	Short-term
Reporting on Progress	
<b>Date of Status Report/ Report of Progress</b>	Date: Progress on Action/Project:

**Action Number:** VWH-6

---

**Mitigation Action Name:** Identify and document repetitively flooded properties.

---

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
<b>Life Safety</b>	0	
<b>Property Protection</b>	1	
<b>Cost-Effectiveness</b>	1	Cost of buyouts is less than repeated future damages
<b>Technical</b>	1	Technically feasible
<b>Political</b>	0	
<b>Legal</b>	1	
<b>Fiscal</b>	-1	May require outside funding
<b>Environmental</b>	1	Return land to natural floodplain
<b>Social</b>	1	
<b>Administrative</b>	1	Village has administrative capability to implement
<b>Multi-Hazard</b>	1	Flood, severe storm
<b>Timeline</b>	1	Short-term
<b>Agency Champion</b>	0	
<b>Other Community Objectives</b>	0	
<b>Total</b>	8	
<b>Priority (H/M/L)</b>	High	

**Name of Jurisdiction:** Village of West Haverstraw

**Name and Title Completing Worksheet:**

**Action Number:** VWH-7

**Mitigation Action Name:** Determine the year built and level of protection for critical emergency facilities and shelters, and pursue potential mitigation opportunities to protect these sites

Assessing the Risk	
<b>Hazard(s) addressed:</b>	All hazards
<b>Specific problem being mitigated:</b>	Critical facilities may be vulnerable to hazards and need support to implement protection measures
Evaluation of Potential Actions/Projects	
<b>Actions/Projects Considered (name of project and reason for not selecting):</b>	Do nothing – vulnerability continues Build new critical facilities with higher standards - costly
Action/Project Intended for Implementation	
<b>Description of Selected Action/Project</b>	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.
<b>Mitigation Action Type</b>	LPR
<b>Goals Met</b>	2, 5
<b>Applies to existing and or new development, or not applicable</b>	Existing
<b>Benefits (losses avoided)</b>	Medium
<b>Estimated Cost</b>	Low
<b>Priority*</b>	High
Plan for Implementation	
<b>Responsible Organization</b>	Building Department
<b>Local Planning Mechanism</b>	
<b>Potential Funding Sources</b>	Village Operating Budget
<b>Timeline for Completion</b>	Short 1-5 years
Reporting on Progress	

<b>Date of Status Report/ Report of Progress</b>	Date: Progress on Action/Project:
--	--------------------------------------

Action Number:

VWH-7

Mitigation Action Name:

Determine the year built and level of protection for critical emergency facilities and shelters, and pursue potential mitigation opportunities to protect these sites

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
<b>Life Safety</b>	1	Critical facilities are the foundation of emergency management and life safety operations
<b>Property Protection</b>	1	Potential mitigation opportunities to protect public and private facilities
<b>Cost-Effectiveness</b>	1	Cost to implement mitigation is less than losses to population served by critical facilities
<b>Technical</b>	1	Technically feasible
<b>Political</b>	0	
<b>Legal</b>	1	Village has legal authority to implement
<b>Fiscal</b>	1	Operating budget for outreach (grant support when pursuing mitigation activities)
<b>Environmental</b>	0	
<b>Social</b>	1	Benefits vulnerable populations
<b>Administrative</b>	1	Village has administrative capability to implement
<b>Multi-Hazard</b>	1	All hazards
<b>Timeline</b>	1	Short-term
<b>Agency Champion</b>	0	
<b>Other Community Objectives</b>	0	
<b>Total</b>	10	
<b>Priority (H/M/L)</b>	High	

**Name of Jurisdiction:** Village of West Haverstraw

**Name and Title Completing Worksheet:** \_\_\_\_\_

**Action Number:** VWH-8

**Mitigation Action Name:** Complete an Emergency Operations Coordinated Response Plan, currently under development with neighboring municipalities.

Assessing the Risk	
<b>Hazard(s) addressed:</b>	All hazards
<b>Specific problem being mitigated:</b>	Village currently does not have an Emergency Operations Coordinated Response Plan
Evaluation of Potential Actions/Projects	
<b>Actions/Projects Considered (name of project and reason for not selecting):</b>	Do nothing – vulnerability continues Complete Emergency Response Plan without neighboring municipality input – less effective
Action/Project Intended for Implementation	
<b>Description of Selected Action/Project</b>	Work with local municipalities to pursue the development of an Emergency Notification System call perimeter for high risk locations of natural hazards with delineable hazard areas.
<b>Mitigation Action Type</b>	EAP
<b>Goals Met</b>	5
<b>Applies to existing and or new development, or not applicable</b>	N/A
<b>Benefits (losses avoided)</b>	Medium
<b>Estimated Cost</b>	Low
<b>Priority*</b>	High
Plan for Implementation	
<b>Responsible Organization</b>	Village of West Haverstraw, Rockland County
<b>Local Planning Mechanism</b>	
<b>Potential Funding Sources</b>	Village Operating Budget, County OES, NYS DHSES
<b>Timeline for Completion</b>	Short 1-5 years
Reporting on Progress	
<b>Date of Status Report/ Report of Progress</b>	Date: Progress on Action/Project:

Action Number:

VWH-8

Mitigation Action Name:

Complete an Emergency Operations Coordinated Response Plan, currently under development with neighboring municipalities.

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Plan for emergency rescue operations
Property Protection	1	Plan for emergency response operations
Cost-Effectiveness	1	Planning is low cost, and there may be an efficiency of scale benefit to conducting the planning effort at the same time as neighboring municipalities
Technical	1	Technically feasible
Political	0	
Legal	1	Village has legal authority to implement
Fiscal	1	Operating budget, in-kind support from county and state partners
Environmental	0	
Social	1	Benefits all populations
Administrative	1	Village has administrative capability to implement
Multi-Hazard	1	All hazards
Timeline	1	Short-term
Agency Champion	0	
Other Community Objectives	0	
<b>Total</b>	9	
<b>Priority (H/M/L)</b>	High	

**Name of Jurisdiction:** Village of West Haverstraw

**Name and Title Completing Worksheet:**

**Action Number:** VWH-9

**Mitigation Action Name:** Provide training and/or certification for Village staff with respect to natural hazard risk management, climate change and its impact on water levels.

Assessing the Risk	
<b>Hazard(s) addressed:</b>	All hazards
<b>Specific problem being mitigated:</b>	Staff is inadequately trained
Evaluation of Potential Actions/Projects	
<b>Actions/Projects Considered (name of project and reason for not selecting):</b>	Do nothing – vulnerability continues Have staff attend courses on natural hazard risk management but not on climate change – lack of training for future hazard changes
Action/Project Intended for Implementation	
<b>Description of Selected Action/Project</b>	Provide training and/or certification for Village staff with respect to natural hazard risk management, climate change and its impact on water levels.
<b>Mitigation Action Type</b>	EAP
<b>Goals Met</b>	3, 5
<b>Applies to existing and or new development, or not applicable</b>	N/A
<b>Benefits (losses avoided)</b>	Medium
<b>Estimated Cost</b>	Low
<b>Priority*</b>	High
Plan for Implementation	
<b>Responsible Organization</b>	Village of West Haverstraw, Rockland County
<b>Local Planning Mechanism</b>	
<b>Potential Funding Sources</b>	Village Operating Budget
<b>Timeline for Completion</b>	Short 1-5 years
Reporting on Progress	
<b>Date of Status Report/ Report of Progress</b>	Date: Progress on Action/Project:



Action Number:

VWH-9

Mitigation Action Name:

Provide training and/or certification for Village staff with respect to natural hazard risk management, climate change and its impact on water levels.

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
<b>Life Safety</b>	0	
<b>Property Protection</b>	1	Trained staff will more effectively implement policies supporting mitigation
<b>Cost-Effectiveness</b>	1	Training is low cost with potential high benefit
<b>Technical</b>	1	Technically feasible
<b>Political</b>	0	
<b>Legal</b>	1	Village has legal authority to implement
<b>Fiscal</b>	1	Operating budget, in-kind support from county and state partners
<b>Environmental</b>	0	
<b>Social</b>	1	Chance to benefits all residents
<b>Administrative</b>	1	Village has administrative capability to implement
<b>Multi-Hazard</b>	1	All hazards
<b>Timeline</b>	1	Short-term
<b>Agency Champion</b>	0	
<b>Other Community Objectives</b>	0	
<b>Total</b>	9	
<b>Priority (H/M/L)</b>	High	

**Name of Jurisdiction:** Village of West Haverstraw  
**Name and Title Completing Worksheet:**  
**Action Number:** VWH-10  
**Mitigation Action Name:** Drainage Installation at the West Haverstraw Municipal Complex

Assessing the Risk	
<b>Hazard(s) addressed:</b>	Severe storm
<b>Specific problem being mitigated:</b>	During a severe storm, Village Hall and the DPW garage are primary response centers. If access is compromised, village residents are at risk.
Evaluation of Potential Actions/Projects	
<b>Actions/Projects Considered (name of project and reason for not selecting):</b>	No action – problem continues Relocate Village Hall/DPW – too expensive
Action/Project Intended for Implementation	
<b>Description of Selected Action/Project</b>	Installation of ancillary drainage
<b>Mitigation Action Type</b>	SIP
<b>Goals Met</b>	2
<b>Applies to existing and or new development, or not applicable</b>	Existing
<b>Benefits (losses avoided)</b>	High
<b>Estimated Cost</b>	Medium
<b>Priority*</b>	High
Plan for Implementation	
<b>Responsible Organization</b>	Village of West Haverstraw
<b>Local Planning Mechanism</b>	Village Administration
<b>Potential Funding Sources</b>	Federal and state grants, Village Operating Budget
<b>Timeline for Completion</b>	2020 Long-term
Reporting on Progress	
<b>Date of Status Report/ Report of Progress</b>	Date: Progress on Action/Project:

Action Number:

VWH-10

Mitigation Action Name:

Drainage Installation at the West Haverstraw Municipal Complex

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
<b>Life Safety</b>	0	
<b>Property Protection</b>	1	Protect Village Hall and DPW garage from flood damage
<b>Cost-Effectiveness</b>	1	Costs will be outweighed by the benefit of emergency response operations continuity
<b>Technical</b>	1	Technically feasible
<b>Political</b>	1	
<b>Legal</b>	1	Village has jurisdiction
<b>Fiscal</b>	0	May need outside funding
<b>Environmental</b>	0	
<b>Social</b>	1	
<b>Administrative</b>	1	Village Administration
<b>Multi-Hazard</b>	0	
<b>Timeline</b>	0	2020 Long-term
<b>Agency Champion</b>	1	
<b>Other Community Objectives</b>	1	Emergency Response Operations Continuity
<b>Total</b>	9	
<b>Priority (H/M/L)</b>	High	

**Name of Jurisdiction:** Village of West Haverstraw  
**Name and Title Completing Worksheet:**  
**Action Number:** VWH-11  
**Mitigation Action Name:** Privately owned critical facilities in floodplain

Assessing the Risk	
<b>Hazard(s) addressed:</b>	All hazards
<b>Specific problem being mitigated:</b>	Privately owned critical facilities in floodplain
Evaluation of Potential Actions/Projects	
<b>Actions/Projects Considered (name of project and reason for not selecting):</b>	No action – continue vulnerability Mitigate to 1% annual chance flood event – not preferred, doesn't meet NYS guidelines
Action/Project Intended for Implementation	
<b>Description of Selected Action/Project</b>	<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". Potential mitigation actions may include the following. The Owner will determine the feasible and cost-effective action to implement.</p> <ul style="list-style-type: none"> <li>- Dry floodproof and install a backup power supply/generator</li> <li>- Retrofit the structure with a sensor that would seal the well itself off from floodwaters, such as a backflow preventer. Add a backup power supply to make sure it works when the power's out.</li> <li>-Drill a new well outside the floodplain</li> </ul>
<b>Mitigation Action Type</b>	EAP
<b>Goals Met</b>	2
<b>Applies to existing and or new development, or not applicable</b>	Existing
<b>Benefits (losses avoided)</b>	Low
<b>Estimated Cost</b>	Low
<b>Priority*</b>	Medium
Plan for Implementation	
<b>Responsible Organization</b>	Private Owner with support from the Village of Haverstraw, Rockland County

<b>Local Planning Mechanism</b>	
<b>Potential Funding Sources</b>	Village Staff Time
<b>Timeline for Completion</b>	Short-term
<b>Reporting on Progress</b>	
<b>Date of Status Report/ Report of Progress</b>	Date: Progress on Action/Project:

Action Number:

VWH-11

Mitigation Action Name:

Privately owned critical facilities in floodplain

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
<b>Life Safety</b>	1	Make critical facility owners better informed on how to ensure continued operation of their facility, which serves the health and safety of the public
<b>Property Protection</b>	1	Protect critical facilities
<b>Cost-Effectiveness</b>	1	Cost of outreach is low – cost of critical facility mitigation is less than potential future damages
<b>Technical</b>	1	Technically feasible
<b>Political</b>	0	
<b>Legal</b>	0	
<b>Fiscal</b>	1	Staff time
<b>Environmental</b>	0	
<b>Social</b>	0	
<b>Administrative</b>	1	Village has administrative capability to implement
<b>Multi-Hazard</b>	0	Flood
<b>Timeline</b>	1	Short-term
<b>Agency Champion</b>	0	
<b>Other Community Objectives</b>	0	
<b>Total</b>	7	
<b>Priority (H/M/L)</b>	Medium	