

## 9.6 TOWN OF HAVERSTRAW

This section presents the jurisdictional annex for the Town of Haverstraw.

### 9.6.1 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
Jerry Knapp, Disaster Coordinator, Firefighter/EMT 845-429-2200 KnappJ@co.rockland.ny.us	George E. Wargo, Jr., Superintendent of Highway 845-429-9126 gwargo@townofhaverstraw.org
NFIP Floodplain Administrator (FPA)	
Pat Brady, Stormwater Coordinator, GSD Engineer 845-629-3443 <a href="mailto:pbrady@jrsb.org">pbrady@jrsb.org</a>	

### 9.6.2 Municipal Profile

The Town of Haverstraw is located north of the Rockland County towns of Clarkstown and Ramapo; east of Orange County; south of the Town of Stony Point (Rockland County); and west of the Hudson River. According to the 2010 Census, the community's population was 36,634.

The town has a total area of 27.4 square miles, 5.3 square miles of which are covered by water. There are three incorporated villages within the town, one of which is also known as Haverstraw. The Village of Haverstraw is the original seat of government for the town, hosting the area's historic central downtown business district and the densest population in northern Rockland County. The villages of Pomona and West Haverstraw are also located within the town. Significant waterways impacting the town include Minisceongo Creek and its tributaries, the Hudson River along the eastern town boundary, and the Mahwah River near the Village of Pomona.

### 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 9.6.8 of this annex which illustrates the hazard areas along with the location of potential new development.

**Table 9.6-1. 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
Recent Development from 2010 to present					
Rosman Center – New York Sports Club	Comm.	1 building (32,560 square feet) Sports Club in a presently developed Shopping Center	NE of 202 on Rosman Rd.	Location Undetermined.	Completed

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
Helmke	Res.	6 single family	Lewis Rd., Garnerville	Location Undetermined.	Built
Juy Estates	Res.	12 single family	Marino Blvd., Pomona	Location Undetermined.	Built
Deslmone-Sottovia	Res	5 single family	Argiro Circle, Garnerville	Location Undetermined.	Built
Jehova Congregation	Comm.	1 building, 4500 square feet	246 Rte. 202, Pomona	Landslide: High; NEHRP: D; WUI: Interface	Under construction
<b>Known or Anticipated Development in the Next Five (5) Years</b>					
Minisceongo Park - a Project proposing up to 254,000 square feet of commercial space in presently undeveloped land north of Rt. 202	Comm.	235,800 square feet (2 buildings)	1630 Rte. 202, Pomona	Location Undetermined.	Approved site plan in litigation
Letchworth Site - presently has some buildings previously used, and some undeveloped space.	Senior Residential housing	175 acres	Town of Haverstraw portion of the Letchworth Village site	Location Undetermined.	The town is in the early stages of marketing this property for development

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

### 9.6.3 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 9.6-2. Hazard Event History**

Dates of Event	Event Type (Disaster Declaration if applicable)	Rockland County Designated?	Summary of Damages/Losses
June 6, 2010	Thunderstorms	N/A	Numerous thunderstorms moved across the Lower Hudson Valley. In Rockland County, wires were reported down in Garnerville (Town of Haverstraw). The County had approximately \$12,000 in damages from this event.
March 13-31, 2010	Severe Storms and Flooding DR-1899	Yes	The storm caused significant damaged to town infrastructure. Surface water flows displaced a substantial amount of grouted stone around a 48-inch culvert outlet near the entrance of the old landfill, causing erosion of the embankment behind the culvert headwall. The Benson Street catch basin headwall and wingwall shifted from increased pressure, requiring repair. Riprap at the Crescent Drive drainage channel culvert washed away. In total, Town workers repaired, rebuilt, and cleared debris from 20 catch basins at a cost of \$36,725. Project worksheets were submitted for reimbursement of emergency work.
December 26-27, 2010	Severe Winter Storm and	Yes	During the incident period of December 26 - 27, 2010, a Severe Winter Storm and Snowstorm disrupted transportation and public



Dates of Event	Event Type (Disaster Declaration if applicable)	Rockland County Designated?	Summary of Damages/Losses
	Snowstorm DR-1957		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. The Town Highway Department and Parks Department responded to clear and open roads to public facilities. The total cost to the town over a 48-hour period beginning on 12 pm, 12/26 was \$106,059. Project worksheets were submitted for reimbursement of emergency work.
August 25 – September 5, 2011	Hurricane Irene DR-4020	Yes	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. The Town of Haverstraw responded to open and clear roads, clear debris, place sandbags, and repair culverts and catch basins. Town personnel conducted emergency clearance of Town roads to provide emergency access. Crews addressed damages at Cheesecote Mountain Road, Benson Street Culvert, Suffern Lane and Langschur Court, Rotella Golf Course, and the Town’s various parks. Total damages reached \$193,381.
October 27 – November 8, 2012	Hurricane Sandy DR-4085	Yes	During incident period of 27 October to 8 November 2012, the Town of 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 power outages throughout the Town. 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. Bowline Point Park was inundated by 12 foot tidal surge of Hudson River that deposited debris throughout the park. River Road was closed due to tidal flooding during high tide. Severe erosion and facility damage was seen at Bowline Point Park. The Town spent \$457,304 to repair the park to pre-disaster conditions, and another \$326,000 in mitigation efforts to stabilize the shoreline from future damage. The Town incurred great costs in responding to the event. The town used trucks and chainsaws to cut trees and push aside debris, and conducted traffic control with barricades, flares, and other tools. A total 3,935 cubic yards of vegetative debris was created town wide. Debris removal and emergency protective measures combined cost over \$400,000. Total equipment and materials costs exceeded \$60,000. The Town Parks Department worked 161 overtime hours at a cost of \$3,740, and the Police Department worked 273 overtime hours for \$17,226. In total, emergency protective, response and recovery measures in the Town totaled \$732,308.

Notes:

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

**9.6.4 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 Town of 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 Town of Haverstraw.

**Table 9.6-3. 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: \$23,171 500-Year GBS: \$2,688,809 2,500-Year GBS: \$41,016,643	Occasional	32	High
Extreme Temperature	Damage estimate not available	Frequent	30	Medium
Flood	1% Annual Chance: \$34,376,000	Frequent	36	High
Landslide	RCV Exposed: \$1,839,969,000	Occasional	36	High
Severe Storm	100-Year MRP: \$634,737 500-year MRP: \$2,502,211 Annualized: \$38,980	Frequent	48	High
Winter Storm	1% GBS: \$13,060,450 5% GBS: \$65,302,250	Frequent	51	High
Wildfire	Estimated Value in the WUI: \$1,932,259,000	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 Town of Haverstraw.

**Table 9.6-4. NFIP Summary**

Municipality	# Policies <sup>a</sup>	# Claims (Losses) <sup>a</sup>	Total Loss Payments <sup>b</sup>	# Rep. Loss Prop. <sup>a</sup>	# Severe Rep. Loss Prop. <sup>a</sup>	# Policies in 100-year Boundary <sup>c</sup>
Town of Haverstraw	29	33	\$370,691	0	0	0

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 9.6-5. 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
Bowline Point Generating Station	Hazmat	X	X	-	-
David B Roche Vol Fire Co	Fire		X	-	-
O & R Bowline Substation	Hazmat	X	X	-	-
Camp Ramaquois Well #2	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:

- According to the 2014 FEMA FIS, the Town of Haverstraw is presently subject to flooding in areas adjacent to Minisceongo Creek and its tributaries in the vicinity of Letchworth Village and Thiells-Mount Ivy Road. The Hudson River often causes flooding in Bowling Park. The Mahwah River causes occasional flooding in the vicinity of Deer Mountain Day Camp.
- There are significant portions (including highly developed areas) of the Towns of Haverstraw, Stony Point, and Ramapo, and the Villages of Pomona and West Haverstraw located within high landslide risk areas
- The following dams are located within the Town.

Dam Name	Municipality	River/Stream	Owner	Storage (Acre-Feet)	Hazard Potential USACE / NYSDEC
Lake Kanawuke Dam	Haverstraw (Town)	Stony Brook	NYS Parks and Recreation	1,935	H/H
Garnerville Dam*	Haverstraw (Town)	Minisceongo Creek	Rockland County Highway Department	198	H/H

Dam Name	Municipality	River/Stream	Owner	Storage (Acre-Feet)	Hazard Potential USACE / NYSDEC
First Reservoir Dam*	Haverstraw (Town)	Horse Chock Brook	NYS OMRDD	116	H/H
Third Reservoir Dam	Haverstraw (Town)	Tr-Horse Chock Brook	NYS OMRDD	373	S/I
Second Reservoir Dam	Haverstraw (Town)	Tr-Horse Chock Brook	NYS OMRDD	272	S/I

\*EAP on file at NYSDEC

### 9.6.5 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 Town of Haverstraw.

**Table 9.6-6. 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	Local	Planning Board	6-24-2002 by L.L. No. 7-2002
Capital Improvements Plan	No	-	-	-
Floodplain Management / Basin Plan	Yes 2-10-2014	Federal, state, local	Building Dept.	Chapter 87
Stormwater Management Plan	Yes 1-25-2010	Local	Engineer and Highway Departments; Patrick Brady, PE, Director of JRSB, Building Inspector and Highway Superintendent	Article XVI: Chapter 137
Open Space Plan	Yes 8-13-1990	Local	Planning/Building	Chapter A176, Article VII
Stream Corridor Management Plan	No	-	-	-
Watershed Management or Protection Plan	Yes 8-13-1990	Local/State	Engineering	Chapter A176, Article VI
Economic Development 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.)
Comprehensive Emergency Management Plan	No	-	-	-
Emergency Operation Plan	Yes Revised Dec. 10, 2014	Local	Emergency Coordinator	Emergency Operation Plan for the Town of Haverstraw
Post-Disaster Recovery Plan	No	-	-	-
Transportation Plan	No	-	-	-
Strategic Recovery Planning Report	No	-	-	-
Other Plans:	No	-	-	-
<b>Regulatory Capability</b>				
Building Code	Yes	State & Local	Building Department	Chapter 84: Fire Prevention and Building Construction, 2007 (New York State Uniform Fire Prevention and Building Code (the Uniform Code) and the State Energy Conservation Construction Code (the Energy Code)); Chapter 167: Zoning, 1990
Zoning Ordinance	Yes 3-17-1958	Local	Zoning, Building Inspector, Planning Board	Chapter 167: Zoning, 1990
Subdivision Ordinance	Yes 8-13-1990	Local	Zoning, Planning Board, Building Department	Chapter A176: Subdivision of Land, 1990
NFIP Flood Damage Prevention Ordinance	Yes	Federal, State, Local	George Behn – Building Inspector	Chapter 87: Flood Damage Prevention, 2014
NFIP: Cumulative Substantial Damages	No	-	-	-
NFIP: Freeboard	Yes	State, Local	Engineers, 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 1-12-2004	Local	Planning Board, Building	Chapter A173: Site Development Plans, 2004
Stormwater Management Ordinance	Yes 1-25-2010	Local	Engineering	Article XVI: Chapter 137: Sewers, Part 3: Stormwater Management, 2006
Municipal Separate Storm Sewer System (MS4)	Yes 1-25-2010	Local/State	Engineering	Chapter 137: Sewers, Part 3: Stormwater Management, 2006
Natural Hazard Ordinance	No	-	-	-
Post-Disaster Recovery Ordinance	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.)
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, steep slope])	Yes 6-26-2006	Local	Engineering/ Building	Chapter 167 (Zoning) & A176-43 (Subdivision of Land, Article V: General Design Standards for Streets – Relation to Topography)

**Administrative and Technical Capability**

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

**Table 9.6-7. Administrative and Technical Capabilities**

Resources	Is this in place? (Yes or No)	Department/ Agency/Position
<b>Administrative Capability</b>		
Planning Board	Yes	Planning Department
Mitigation Planning Committee	Yes	Emergency Coordinator
Environmental Board/Commission	No	
Open Space Board/Committee	Yes	Planning/Zoning/Building
Economic Development Commission/Committee	No	
Maintenance programs to reduce risk	Yes	Building and Highway Dept.
Mutual aid agreements	Yes	Building, Engineering, Police, Fire, and Highway Dept.
<b>Technical/Staffing Capability</b>		
Planner(s) or engineer(s) with knowledge of land development and land management practices	Yes	Planning, Zoning, Engineering, Building
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	Yes	Engineering
Planners or engineers with an understanding of natural hazards	Yes	Planning and Engineering
NFIP Floodplain Administrator (FPA)	Yes	George Behn – Building Inspector
Surveyor(s)	Yes	Engineering
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	Yes	Building and Highway Dept.
Scientist familiar with natural hazards	No	-
Emergency Manager	Yes	Jerry Knapp – Emergency Coordinator
Grant writer(s)	Yes	Staff and consultant engineers
Staff with expertise or training in benefit/cost analysis	Yes	Consultant engineers
Professionals trained in conducting damage assessments	Yes	Brooker Engineers and GHD Engineering Firm



**Fiscal Capability**

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

**Table 9.6-8. Fiscal Capabilities**

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

**Community Classifications**

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

**Table 9.6-9. Community Classifications**

Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	-	-
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)	No	-	-
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 Town of Haverstraw’s capability to work in a hazard-mitigation capacity and/or effectively implement hazard mitigation strategies to reduce hazard vulnerabilities.

**Table 9.6-10. 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	
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)**

Pat Brady, Brooker Engineer / GSD Engineer – Storm Water Coordinator; George Behn – Building Inspector and Michael Gamboli – Director of Finance

**Flood Vulnerability Summary**

The Town of Haverstraw does not maintain lists and inventories of properties that have been flood damaged.

There were approximately 4-6 structures in the Town damaged by Floyd, Irene, Sandy or other events. The damaged properties included residential, commercial, and mixed-use structures. The town made substantial damage estimates after Hurricane Sandy, and prepared 5 FEMA project worksheets. Of those damaged, one

mixed use property owner in Planned Industrial Office zone was demolished after the storm. One property was mitigated using FEMA funds.

### Resources

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The FPA assumes the responsibilities of floodplain administration with assistance from staff within the building and engineering departments. The FPA conducts permit review, inspections, GIS, and education/outreach. Outreach and education occurs through one-on-one consultations with community members visiting the building office with questions regarding flood hazards and risk, flood risk reduction through NFIP insurance, mitigation, or other programs.

The FPA believes that policies and programs of the Rockland County Stream Agency create barriers to running an effective floodplain management program in the Town. The FPA feels adequately supported and trained to fulfill his/her responsibilities as the local floodplain administrator. The FPA would consider attending continuing education or certificate training on floodplain management if it were offered in the County.

### Compliance History

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The Town may not be in good standing with the NFIP due to one non-compliant property – the resident applied for a LOMA because their property is in the floodplain but has never been flooded, but the LOMA was denied. The Town has not had a compliance audit (CAV).

As of June 30, 2016, there are 29 policies in force in the Town of Haverstraw. There are no repetitive loss or severe repetitive loss properties in the Town. Since 1978, 33 claims have been paid totaling \$370,691. Another 30 claims were closed without payment. According to the NFIP Policy Statistics report, the policies in the Town insure approximately \$12,621,900 of property with total annual insurance premiums of \$13,569.

### Regulatory

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The Town of Haverstraw's floodplain management regulations/ordinances meet but do not exceed the FEMA and State minimum requirements. The town also has other local ordinances, plans, and programs that support floodplain management and meeting NFIP requirements, including the zoning law, site plan review ordinance, stormwater management ordinance, and the Comprehensive Master Plan.

The town has not considered joining the Community Rating System to reduce flood insurance premiums for their insured, but would attend an informational seminar if one were offered locally.

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

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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

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The Town has a Planning and Zoning Board which meet every month for a workshop and to discuss natural hazards and hazard mitigation items as they come about.

**Planning Board:** It is the legislative intent of the Planning Board to consider land subdivisions and site development plans as part of a plan for the orderly, efficient and economical development of the Town of

Haverstraw. The Planning Board member functions specifically include efforts to reduce natural hazard risk through the site development plan process. The Planning Board has the authority to review, approve or disapprove the subdivision plats and site plans within the Town of Haverstraw that consist of the following:

**Minor Subdivision** - Any subdivision containing three (3) lots or less fronting on an existing street, not involving any new street, road or the extension of municipal facilities or the creation of any public improvements.

**Major Subdivision** - All subdivisions not classified as minor, including but not limited to a subdivision of four (4) or more lots or any size subdivision requiring any new street or extension of municipal facilities or the creation of any public improvements.

The Planning Board refers to engineering plans, soil samples, applicable tables and calculations to guide their decisions with respect to natural hazard risk management.

**Zoning Board of Appeals:** The Zoning Board of Appeals has all the authority and duties prescribed by the State of New York Town Law and Town of Haverstraw code standards, including but not limited to the following:

- **Appeals:** An order, requirement, decision or determination of the building inspector or similar official charged with the enforcement of the codes of the Town of Haverstraw.
- **Interpretations:** On an appeal from any order, requirement, decision or determination of the building inspector or similar official charged with the enforcement of the codes of the Town. Determinations of the meaning of any portion of the text of the zoning codes or of any condition or requirement specified or made under the provisions of the code.
- **Variances:** Bulk Variances, Use Variances
- **Special Permits:** See special permits uses as listed in the Haverstraw Town Code Land Use regulations.

**Comprehensive Master Plan:** The Comprehensive Master Plan adopted by the Planning Board for the development of the entire area of the town, pursuant to § 272-a of the Town Law, shows the desirable streets, bridges and tunnels and the approaches thereto, viaducts, parks, public reservations, roadways in parks, sites for public buildings and structures, waterways and drainage systems and such other features, existing and proposed, as will provide for the improvement of the town and its future growth, protection and development and will afford adequate facilities for the housing, transportation, distribution, comfort, convenience, public health, safety and general welfare of the population of the town. The Town's master plan includes areas of natural hazard risk including flood-prone areas and steep slopes, and refers to the county-wide Hazard Mitigation Plan.

**Emergency Operation Plan:** The Emergency Operation Plan for the Town of Haverstraw was updated in 2014. Its implementation is overseen by the Town's Emergency Coordinator.

**2012 Stormwater Management Plan:** The Town is an MS4 Regulated Community, and do you have a formal Stormwater Management Plan. This plan specifies projects/actions/initiatives to reduce the volume of stormwater, or otherwise mitigate stormwater flooding.

**Open Space Plan:** The Town has an Open Space Plan which helps to manage natural hazard risk through erosion control, prescribing maintenance for grass and trees, and providing for natural slope stabilization.

### Regulatory and Enforcement (Ordinances)

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The Town's municipal zoning and subdivision regulations, and site plan review process, aim to minimize natural hazard risk. Town codes and ordinances require developers to take additional actions such as measures for stormwater detention and creating easements in hazard areas/zones to mitigate natural hazard risk.

**Building Code (Chapter 84):** The Town of Haverstraw adheres to a building code through local authority of the town Building Department. The authority for enforcing the building code comes from the New York State Building Code.

**Flood Damage Prevention Ordinance (Chapter 87):** The purpose of this ordinance is to promote public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by provisions designed to:

- A. Regulate uses which are dangerous to health, safety and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities;
- B. Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
- C. Control the alteration of natural floodplains, stream channels, and natural protective barriers which are involved in the accommodation of floodwaters;
- D. Control filling, grading, dredging and other development which may increase erosion or flood damages;
- E. Regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards to other lands; and
- F. Qualify and maintain for participation in the National Flood Insurance Program.

The objectives of this ordinance include:

- A. To protect human life and health;
- B. To minimize expenditure of public money for costly flood control projects;
- C. To minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
- D. To minimize prolonged business interruptions;
- E. To minimize damage to public facilities and utilities such as water and gas mains, electric, telephone, sewer lines, streets and bridges located in areas of special flood hazard;
- F. To help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard so as to minimize future flood blight areas;
- G. To provide that developers are notified that property is in an area of special flood hazard; and
- H. To ensure that those who occupy the areas of special flood hazard assume responsibility for their actions.

The Town Stormwater Coordinator is the appointed local floodplain administrator to administer and implement the ordinance by granting or denying floodplain development permits in accordance with its provisions.

**Zoning Ordinance (Chapter 167):** Zoning is a useful tool to consider when developing a mitigation strategy. It can be used to restrict new development, require low-density development, and designate specific uses (e.g. recreational) in the hazard prone areas. Private property rights must be considered, but enacting a zoning ordinance can reduce or potentially eliminate damages from future hazard events. The Town of Haverstraw is hereby divided into 12 districts, as shown on the 199- “Revised Zoning Map of the Town of Haverstraw.” The ordinance is enforced by the Building Inspector.

**Site Development Plan Review (Chapter A173):** Site plan review requirements are used to evaluate proposed development prior to construction. An illustration of the proposed work, including its location, exact dimensions, existing and proposed buildings, and many other elements are often included in the site plan review requirements. The site plan reviews offer an opportunity to incorporate mitigation principles, such as ensuring that the proposed development is not in an identified hazard area and that appropriate setbacks are included.

The Town has adopted site development plan review requirements, and the Planning Board is the approving authority for all applications for site development plan permits.

**Subdivision Ordinance:** Subdivision ordinances offer an opportunity to account for natural hazards prior to the development of land as they formulate regulations when the land is subdivided. Subdivision design that incorporates mitigation principles can reduce the exposure of future development to hazard events. The Town has adopted a subdivision ordinance that sets forth procedures and requirements for how land within the Town may be subdivided into lots, blocks or sites, with or without streets or highways, and appoints the Planning Board to review and approve or disapprove subdivision plans. The purpose of this ordinance is to ensure land subdivisions conform to the Official Map and Master Plan, and are part of a plan for the orderly, efficient and economical development of the Town.

**Stormwater Management (Chapter 137: Sewers, Part 3: Stormwater Management):** The Town of Haverstraw has enacted Stormwater Management Regulations (SMRs) to protect and safe guard the general health, safety and welfare of the public residing with in the Town of Haverstraw and the natural resources of Town. As part of the SMRs, Patrick Brady, P.E., has been designated the Stormwater Management Officer (SMO) for the Town of Haverstraw. The SMO oversees the SMRs and manages the Municipal Separate Storm Sewer Systems (MS4s).

### Operational and Administration

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Town staff participate in associations, organizations, groups or other committees as facilitated by the County of Rockland that support natural hazard risk reduction and build hazard management capabilities. Town staff are occasionally offered training or continuing professional education which supports natural hazard risk reduction, but would benefit from additional training and/or certification in this area. Also, the Town is continually working with the County on their GIS program and upgrades for most accurate information.

The Town’s Emergency Coordinator works with other town staff to review existing emergency response plan for enhancement opportunities on an annual basis.

### Funding

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While the Town's operating budget does not include line items for mitigation projects/activities, it has a Capital Improvements Budget which includes expenditures for mitigation-related capital projects on an as-needed basis.

The Town has pursued grant funding for mitigation-related projects, and was awarded roughly \$350,000 in FEMA funding for the Bowline Shoreline Restoration.

### Education and Outreach

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The town newsletter, the *Town of Haverstraw Talk of the Town*, is sent out quarterly. During the 2010 mitigation planning cycle, memos of the Hazard Mitigation Plan (HMP) development status, and reports and updates of plan were posted on the Town Clerk's Bulletin Board at Municipal Building. The Town also posted a link to the Rockland County HMP on its Town Website. The Town noted that an enhanced outreach program would promote further public awareness in the community with respect to natural hazard risk management.

Disaster Land is a web-based emergency management software system used by Rockland County. The Towns 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 also 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.

## 9.6.6 Mitigation Strategy and Prioritization

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

### Past Mitigation Initiative Status

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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 9.6-11. 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
Storm surge, build jetties, stabilize shoreline	Parks Dept.	Complete	Shoreline restored, one jetty with recreational pier extended off the jetty.  Funded through FEMA monies for construction – the Town is still waiting final payment from FEMA	Include in 2018 HMP	Construct additional jetties to secure and stabilize the shoreline.
Storm surge, dredge Minisceongo Stream, stabilize banks	Highway Dept.	No Progress	Nothing has been done, Minisceongo Stream is Rockland County Stream	Include in 2018 HMP	Dredge Minisceongo Stream to reduce flooding.
Stabilize banks and prevent flooding along Minisceongo	Highway Dept.	No Progress	Rockland County Stream	Include in 2018 HMP	Stabilize banks to reduce future erosion, narrowing of the streambed, and resulting flooding along the Minisceongo.
DPW bridge and access road	Highway Dept.	In Progress	Town is proposing an emergency access road in the back of the Highway Garage up to Creekview Road. Town needs easement from one property owner.	Include in 2018 HMP	Get Easement and then Pave Access road.
Drill well(s) and install storage/pump system	Golf Dept.	No Progress	Cost	Include in 2018 HMP	Correct drainage on fairway number 13 and 16
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; Town Supervisor	No Progress	Comprehensive plan was not updated in last HMP planning cycle.	Include in 2018 HMP	Ensure that local comprehensive plan incorporates natural disaster mitigation techniques through a courtesy review or draft plans by the



2010 Mitigation Action	Responsible Party	Status (In progress, No progress, Complete)	Describe Status	Next Step (Include in 2018 HMP or Discontinue)	Describe Next Step
					County Planning Department.
2.A Expand and disseminate GIS and other hazard information on the internet.	CPG member; Town Supervisor	In Progress	Continually working with the County on their GIS program and upgrades for most accurate information	Discontinue	Operational capability
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; Town Supervisor	In Progress	Working with the County of Rockland	Include in 2018 HMP	Work with Rockland County to pursue the development of an Emergency Notification System call perimeter for high risk locations of natural hazards with delineable hazard areas. Work with Rockland County staff to utilize aerial mapping, along with GIS mapping for natural hazards that was updated as part of the hazard mitigation plan update.
Hold periodic workshops regarding zoning and planning issues that arise regarding natural hazards and hazard mitigation.	CPG member; Town Supervisor	Complete	Town Planning and Zoning Boards meet every month for workshop and discuss natural hazards and hazard mitigation items as they come about	Discontinue	Operational capability
4.F Continue to implement best management practices for floodplain areas.	CPG member; Town Supervisor	In Progress	Always working with different agencies and our Building Department and consultant engineers	Discontinue	Operational capability - Continually updating information as items come up
4.G Identify and document repetitively flooded properties. Work with owners to explore mitigation opportunities for repetitively flooded properties, and if appropriate and	CPG member; Town	In Progress	Building Department and engineers work with property owner as	Discontinue	Operational capability - Continually updating information as items come



2010 Mitigation Action	Responsible Party	Status (In progress, No progress, Complete)	Describe Status	Next Step (Include in 2018 HMP or Discontinue)	Describe Next Step
feasible, carry out acquisition, relocation, elevation and floodproofing measures to protect these properties.	Supervisor		situations arises		up
4.J Develop specific mitigation solutions for floodprone road systems (roads, bridges, intersections, drainage, etc.) under the leadership of County DPW.	CPG member; Town Supervisor	No Progress		Discontinue	
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; Town Supervisor	No Progress		Discontinue	
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; Town Supervisor	In Progress	Working with our Emergency Coordinator to update information on an annual basis.	Discontinue	Operational capability - Continually updating information as items come up
Public awareness program on hazards, prevention and mitigation: assist CPG Chairperson in maintenance of mitigation planning web presence; assist CPG Chairperson in preparation of annual hazards and mitigation planning fact sheet and its distribution; assist CPG chairperson in preparation of hazards survey; periodic discussion of hazard mitigation and the mitigation plan at other regular local meetings; use of annual flyers, newsletters, advertisements, or radio/TV announcements, etc. at the discretion of the jurisdiction (incorporating as much free information as possible from the FEMA publications warehouse and other appropriate sources).	RCOFES lead with direct participation and involvement from each jurisdiction's CPG member	No Progress		Discontinue	
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	Each jurisdictional	In Progress	Ongoing process	Discontinue	Operational capability - Code enforcements are updated by Building Inspector and reviewed all

2010 Mitigation Action	Responsible Party	Status (In progress, No progress, Complete)	Describe Status	Next Step (Include in 2018 HMP or Discontinue)	Describe Next Step
and, where a need is identified; modify/amend the codes/ordinances as applicable.	CPG member				the time on an as need basis.
Code enforcement: enforcement of NYS and local building codes	Each jurisdictional CPG member	Complete	Ongoing process	Discontinue	Operational capability - Code enforcements are done by Building Inspector

### Proposed Hazard Mitigation Initiatives for the Plan Update

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The Town of 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 9.6-12 summarizes the comprehensive-range of specific mitigation initiatives the Town of 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 9.6-13 provides a summary of the prioritization of all proposed mitigation initiatives for the Plan update.

Table 9.6-12. 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
TH-1	Enhance outreach to promote further public education and awareness in the community with respect to natural hazard risk management.	N/A	All hazards	1, 3	Town of Haverstraw, Rockland County	Medium	Low	Town Operating Budget	Short 1-5 years	High	EAP	PI
TH-2	Shoreline Mitigation at Bowline Point Park - Construct 2 additional jetties on the riverside of Bowline Point Park to secure and stabilize the shoreline.	Existing	Flood, severe storm	2	Town of Haverstraw, NYS DEC & Army Corp	Property & infrastructure	High > \$100,000	FEMA (HMGP, FMA, PDM), CDBG, NYS DHSES, Town Operating Budget	Long-term	Medium	SIP	PP SP
TH-3	Minisceongo Stream Maintenance - Flood remediation including routine stream maintenance and dredging. 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
TH-4	Stabilize banks to reduce future erosion, narrowing of the streambed, and resulting flooding along Minisceongo	Both	Flood, severe storm	4	Highway Dept., Rockland County	Property & infrastructure	Medium-High	FEMA (HMGP, FMA, PDM), CDBG, NYS DHSES, Town Operating Budget	TBD	Medium	NSP	NR
TH-5	Highway Garage Emergency Access Road - Complete a paved emergency access road from the back of the Highway Garage up to Creekview Road. Must acquire	Both	Flood, severe storm	1, 2	Highway Dept., Private Landowner	Property and infrastructure	High > \$100,000	Town funds or FEMA (HMGP, FMA, PDM), CDBG, NYS DHSES	Short 1-5 years	High	SIP	ES



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
	easement from one property owner.											
TH-6	Drill well(s) and install storage/pump system to correct drainage on golf course fairway number 13 and 16	Existing	Flood	2	Town Golf Dept.	Medium	High	Town funds	DOF	Medium	SIP	PP
TH-7	Maintenance of tributary Drainage and storm water infrastructure. Improve and maintain Storm Water Control Systems	Existing	Flood, severe storm	2	Town of Haverstraw MS4 administrator	Property and Infrastructure	High > \$100,000	Town funds	Ongoing program	High	SIP NSP	PR
TH-8	The following critical facilities are located floodplain and identified as vulnerable to the flood hazard: Camp Ramaquois, Well #2, O&R Bowline Substation, and Bowline Point Gas Power Plant. The Town does not have jurisdiction over these facilities to mitigate. The Town will work with the Village and County to notify the facility manager/operator of these critical facilities regarding their flood vulnerability as identified during the Rockland County HMP update and NYS' requirement to protect to the 500-year flood or worst-case scenario. The Town will provide the owners information regarding grant options for funding to implement their mitigation action. Potential feasible projects may included the	Existing	Flood	2	Private Property Owners with Town of Haverstraw support	Low	Low	Town Staff Time	Short 1-5 years	Medium	EAP	PR



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
	<p>following. The private owners will need to determine the most cost effective and feasible mitigation action for these facilities:</p> <ul style="list-style-type: none"> <li>• Elevate utilities/infrastructure</li> <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, like 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> <li>• Relocate outside the floodplain</li> </ul>											
TH-9	<p>The David B Roche Fire Company building is located in the floodplain and identified as vulnerable to the flood hazard. This building is owned by the Fire District; the Town does not have jurisdiction to mitigate the structure. The Town will work with the Fire District to notify them of the building's vulnerability and NYS' requirement to protect the structure to the 500-year or worst-case scenario. The Town will provide the Fire District options for grant</p>	Existing	Flood	2	Fire District, supported by Town	High	Low for outreach	Town Staff Time	Short 1-5 years	High	EAP	PR

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
	funding to implement their selected mitigation action. Potential feasible projects may include the following. The Fire District will need to determine which is the cost-effective and feasible mitigation action for this building: <ul style="list-style-type: none"> <li>Elevate utilities/infrastructure</li> <li>Ensure there is an alternate space identified to store the trucks and apparatus outside the floodplain</li> </ul>											

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:

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





Costs:

- 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 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:

- 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 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 9.6-13. 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 Objectives	Total	High / Medium / Low
TH-1	Enhance outreach to promote further public education and awareness in the community with respect to natural hazard risk management.	1	1	1	1	0	0	1	0	1	1	1	1	1	0	10	High
TH-2	Bowline Point Park - Construct 2 additional jetties on the riverside of Bowline Point Park to secure and stabilize the shoreline.	-1	1	1	1	0	-1	-1	1	0	0	0	0	0	0	1	Medium
TH-3	Minisceongo Stream Maintenance - Flood remediation including routine stream maintenance and dredging. Coordinated with Town of Haverstraw and Rockland County.	1	1	1	1	1	-1	-1	1	0	-1	1	1	0	0	5	Medium
TH-4	Stabilize banks to reduce future erosion, narrowing of the streambed, and resulting flooding along Minisceongo	0	1	1	1	0	0	0	1	1	1	0	0	1	0	7	Medium
TH-5	Highway Garage Emergency Access Road - Complete a paved emergency access road from the back of the Highway Garage up to Creekview Road. Must acquire easement from one property owner.	1	1	1	1	1	1	1	0	0	1	1	1	1	0	11	High
TH-6	Drill well(s) and install	0	1	1	1	0	1	1	0	0	1	0	0	1	0	7	Medium



Table 9.6-13. 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 Objectives	Total	High / Medium / Low
	storage/pump system to correct drainage on golf course fairway number 13 and 16																
TH-7	Maintenance of tributary Drainage and storm water infrastructure. Improve and maintain Storm Water Control Systems	0	1	1	1	1	1	1	1	0	1	1	0	1	0	10	High
TH-8	The following critical facilities are located floodplain and identified as vulnerable to the flood hazard: Camp Ramaquois, Well #2, O&R Bowline Substation, and Bowline Point Gas Power Plant. The Town does not have jurisdiction over these facilities to mitigate. The Town will work with the Village and County to notify the facility manager/operator of these critical facilities regarding their flood vulnerability as identified during the Rockland County HMP update and NYS' requirement to protect to the 500-year flood or worst-case scenario. The	0	1	1	1	0	1	1	0	0	1	0	1	0	0	7	Medium



Table 9.6-13. 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 Objectives	Total	High / Medium / Low	
	<p>Town will provide the owners information regarding grant options for funding to implement their mitigation action. Potential feasible projects may included the following. The private owners will need to determine the most cost effective and feasible mitigation action for these facilities:</p> <ul style="list-style-type: none"> <li>• Elevate utilities/infrastructure</li> <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, like 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> <li>• Relocate outside the floodplain</li> </ul>																	
TH-9	The David B Roche	1	1	1	1	0	0	0	0	1	1	1	1	1	1	10	High	



Table 9.6-13. 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 Objectives	Total	High / Medium / Low
	<p>Fire Company building is located in the floodplain and identified as vulnerable to the flood hazard. This building is owned by the Fire District; the Town does not have jurisdiction to mitigate the structure. The Town will work with the Fire District to notify them of the building's vulnerability and NYS' requirement to protect the structure to the 500-year or worst-case scenario. The Town will provide the Fire District options for grant funding to implement their selected mitigation action. Potential feasible projects may include the following</p>																

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

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

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None at this time.

### 9.6.8 Hazard Area Extent and Location

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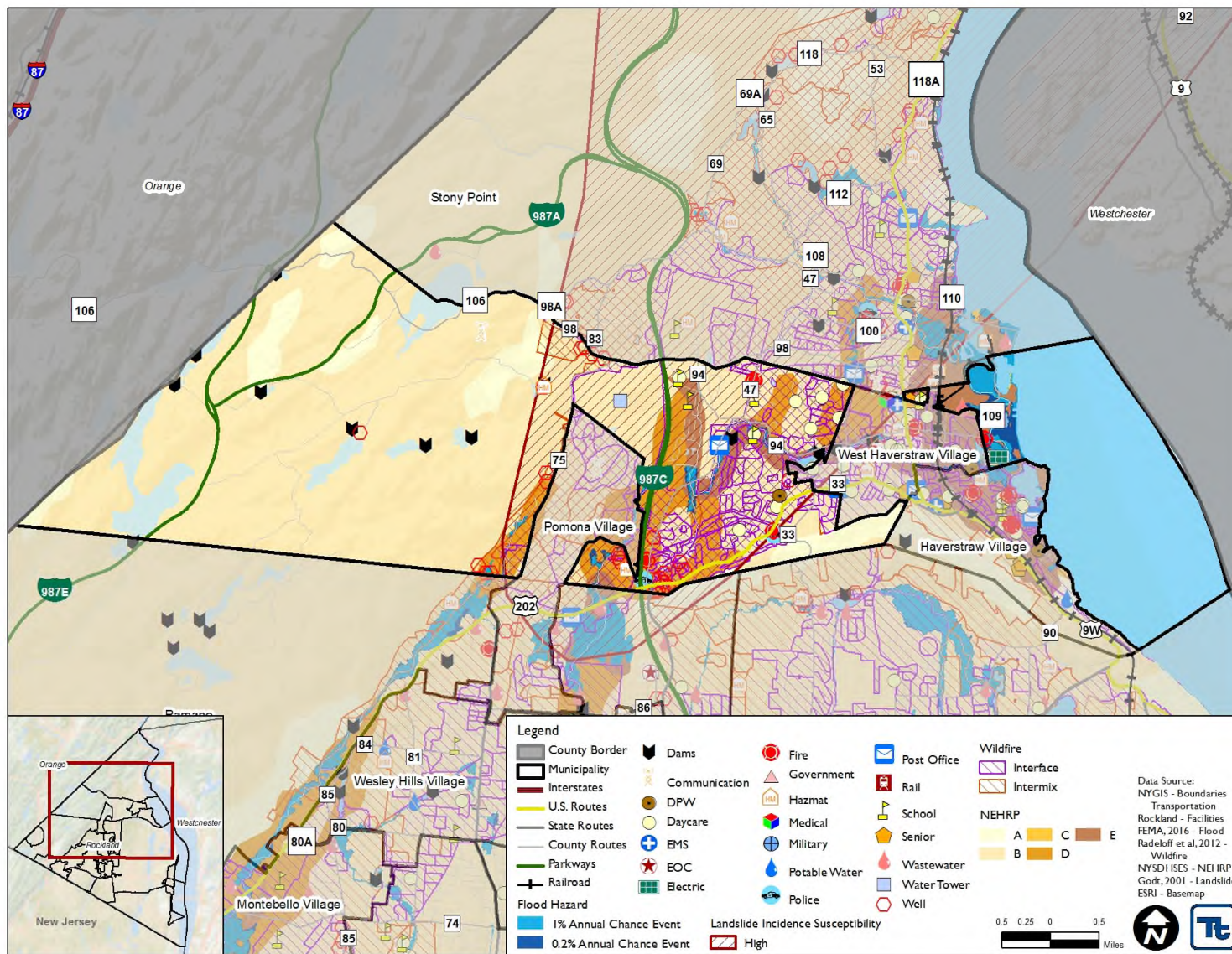
Hazard area extent and location maps have been generated for the Town of Haverstraw that illustrate the probable areas impacted within the municipality. These maps are based on the best available data at the time of the preparation of this plan, and are considered to be adequate for planning purposes.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

### 9.6.9 Additional Comments

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None at this time.

Figure 9.6-1. Town of Haverstraw Hazard Area Extent and Location Map



**9.6.10 ACTION WORKSHEETS**

<b>Name of Jurisdiction:</b>	Town of Haverstraw
<b>Name and Title Completing Worksheet:</b>	Michael Gamboli Director of Finance
<b>Action Number:</b>	TH-1
<b>Mitigation Action Name:</b>	Enhance public outreach

Assessing the Risk	
<b>Hazard(s) addressed:</b>	All hazards
<b>Specific problem being mitigated:</b>	Increase public awareness on all hazards
Evaluation of Potential Actions/Projects	
<b>Actions/Projects Considered (name of project and reason for not selecting):</b>	No nothing – not preferred, public education needed
Action/Project Intended for Implementation	
<b>Description of Selected Action/Project</b>	Enhance outreach to promote further public education and awareness in the community with respect to natural hazard risk management.
<b>Mitigation Action Type</b>	EAP
<b>Goals Met</b>	1, 3
<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>	Town of Haverstraw, Rockland County
<b>Local Planning Mechanism</b>	
<b>Potential Funding Sources</b>	Town 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:** TH-1

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**Mitigation Action Name:** Enhance public outreach

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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>	0	
<b>Cost-Effectiveness</b>	1	Outreach is a low cost action
<b>Technical</b>	1	Technically feasible
<b>Political</b>	0	
<b>Legal</b>	1	Town has legal authority to conduct outreach, and to use FEMA and County materials
<b>Fiscal</b>	1	Staff-time
<b>Environmental</b>	0	
<b>Social</b>	1	Will reach a large segment of the population, including vulnerable populations
<b>Administrative</b>	1	Town 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:** Town of Haverstraw  
**Name and Title Completing Worksheet:** Michael Gamboli Director of Finance  
**Action Number:** TH-2  
**Mitigation Action Name:** Shoreline Mitigation at Bowline Point Park

Assessing the Risk	
<b>Hazard(s) addressed:</b>	Flooding
<b>Specific problem being mitigated:</b>	Erosion of Shoreline
Evaluation of Potential Actions/Projects	
<b>Actions/Projects Considered (name of project and reason for not selecting):</b>	Armor Shoreline and Install two additional jetties
Action/Project Intended for Implementation	
<b>Description of Selected Action/Project</b>	To construct 2 jetties on the riverside of Bowline Point Park
<b>Mitigation Action Type</b>	Structure and Infrastructure project
<b>Goals Met</b>	Protect property, facilities and infrastructure
<b>Applies to existing and or new development, or not applicable</b>	New and existing
<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>	Town of Haverstraw
<b>Local Planning Mechanism</b>	NYS DEC & Army Corp
<b>Potential Funding Sources</b>	Grants
<b>Timeline for Completion</b>	Long-term
Reporting on Progress	
<b>Date of Status Report/ Report of Progress</b>	Date: Progress on Action/Project:

Action Number:

TH-2

Mitigation Action Name:

Shoreline Mitigation at Bowline Point Park

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	0	
Legal	-1	Need NYS DEC and Army Corp Engineer approvals
Fiscal	-1	Would require project to be budgeted and monies from grants and other sources
Environmental	1	
Social	0	
Administrative	0	
Multi-Hazard	0	
Timeline	0	Depends on funding and permits
Agency Champion	0	
Other Community Objectives	0	
<b>Total</b>	<b>1</b>	
<b>Priority (H/M/L)</b>	Medium	

**Name of Jurisdiction:** Town of Haverstraw  
**Name and Title Completing Worksheet:** Michael Gamboli Director of Finance  
**Action Number:** TH-3  
**Mitigation Action Name:** Minisceongo Stream Maintenance

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>	<ul style="list-style-type: none"> <li>- Stream Maintenance of the Minisceongo</li> <li>- Dredging of the Minisceongo stream</li> <li>- Rockland County has jurisdiction of Minisceongo Stream</li> </ul>
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:

TH-3

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:** Town of Haverstraw  
**Name and Title Completing Worksheet:** Michael Gamboli Director of Finance  
**Action Number:** TH-4  
**Mitigation Action Name:** Stabilize banks to reduce future erosion, narrowing of the streambed, and resulting flooding along Minesceongo

Assessing the Risk	
<b>Hazard(s) addressed:</b>	Flood, severe storm
<b>Specific problem being mitigated:</b>	Flooding and reduced stream flow
Evaluation of Potential Actions/Projects	
<b>Actions/Projects Considered (name of project and reason for not selecting):</b>	No nothing – not preferred, stream bank degradation and flood risk continues
Action/Project Intended for Implementation	
<b>Description of Selected Action/Project</b>	Stabilize banks to reduce future erosion, narrowing of the streambed, and resulting flooding along Minesceongo
<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>	Medium-High
<b>Priority*</b>	Medium
Plan for Implementation	
<b>Responsible Organization</b>	Town Highway Dept., Rockland County
<b>Local Planning Mechanism</b>	
<b>Potential Funding Sources</b>	FEMA (HMGP, FMA, PDM), CDBG, NYS DHSES, Town Operating Budget
<b>Timeline for Completion</b>	TBD
Reporting on Progress	
<b>Date of Status Report/ Report of Progress</b>	Date: Progress on Action/Project:

Action Number:

TH-4

Mitigation Action Name:

Stabilize banks to reduce future erosion, narrowing of the streambed, and resulting flooding along Minesceongo

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
<b>Life Safety</b>	1	Reduce risk of bank failure and roadway closure.
<b>Property Protection</b>	1	Reduce risk of bank failure and infrastructure damage.
<b>Cost-Effectiveness</b>	1	Cost to implement is less than long-term avoided losses
<b>Technical</b>	1	Action is technically feasible
<b>Political</b>	1	Leadership of multiple neighboring towns support this action
<b>Legal</b>	-1	Jurisdiction is Rockland County responsibility
<b>Fiscal</b>	-1	Jurisdiction is Rockland County responsibility
<b>Environmental</b>	1	Restore natural creek habitats
<b>Social</b>	0	
<b>Administrative</b>	-1	Rockland County Responsibility
<b>Multi-Hazard</b>	1	Flood, severe storm
<b>Timeline</b>	1	TBD
<b>Agency Champion</b>	0	
<b>Other Community Objectives</b>	0	
<b>Total</b>	5	
<b>Priority (H/M/L)</b>	Medium	

**Name of Jurisdiction:** Town of Haverstraw  
**Name and Title Completing Worksheet:** Michael Gamboli Director of Finance  
**Action Number:** TH-5  
**Mitigation Action Name:** Highway Garage culvert/Bridge and Emergency Access Road

Assessing the Risk	
<b>Hazard(s) addressed:</b>	Flooding
<b>Specific problem being mitigated:</b>	Access to Highway Garage
Evaluation of Potential Actions/Projects	
<b>Actions/Projects Considered (name of project and reason for not selecting):</b>	To have full access to Highway Garage in all emergencies to protect the Town residents.
Action/Project Intended for Implementation	
<b>Description of Selected Action/Project</b>	Construct emergency access road in back of Highway Garage up to Creekview Drive
<b>Mitigation Action Type</b>	Structure and infrastructure Project
<b>Goals Met</b>	Protect life, property and facilities
<b>Applies to existing and or new development, or not applicable</b>	Existing and new
<b>Benefits (losses avoided)</b>	Property and infrastructure
<b>Estimated Cost</b>	High >100,000
<b>Priority*</b>	High
Plan for Implementation	
<b>Responsible Organization</b>	Town of Haverstraw
<b>Local Planning Mechanism</b>	Town Board
<b>Potential Funding Sources</b>	Town funds or grants
<b>Timeline for Completion</b>	Short 1-5 years
Reporting on Progress	
<b>Date of Status Report/ Report of Progress</b>	Date: 4-5-17 Progress on Action/Project: about 25% complete for emergency access road



Action Number:

TH-5

Mitigation Action Name:

Highway Garage culvert/Bridge emergency access road

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	I	Need to do condemnation on small piece of property to gain access
Fiscal	1	
Environmental	0	
Social	0	
Administrative	1	
Multi-Hazard	1	
Timeline	1	
Agency Champion	1	
Other Community Objectives	0	
<b>Total</b>	11	
<b>Priority (H/M/L)</b>	High	

**Name of Jurisdiction:** Town of Haverstraw  
**Name and Title Completing Worksheet:** Michael Gamboli Director of Finance  
**Action Number:** TH-6  
**Mitigation Action Name:** Drainage improvements on golf course fairway number 13 and 16

Assessing the Risk	
<b>Hazard(s) addressed:</b>	Flooding
<b>Specific problem being mitigated:</b>	Flooding of town golf course
Evaluation of Potential Actions/Projects	
<b>Actions/Projects Considered (name of project and reason for not selecting):</b>	Do nothing – Town will continue to incur costs related to flood damage repair
Action/Project Intended for Implementation	
<b>Description of Selected Action/Project</b>	Drill well(s) and install storage/pump system to correct drainage on golf course fairway number 13 and 16
<b>Mitigation Action Type</b>	Structure and infrastructure Project
<b>Goals Met</b>	2
<b>Applies to existing and or new development, or not applicable</b>	Existing
<b>Benefits (losses avoided)</b>	Medium
<b>Estimated Cost</b>	High
<b>Priority*</b>	Medium
Plan for Implementation	
<b>Responsible Organization</b>	Town of Haverstraw Golf Dept.
<b>Local Planning Mechanism</b>	
<b>Potential Funding Sources</b>	Town funds
<b>Timeline for Completion</b>	DOF
Reporting on Progress	
<b>Date of Status Report/ Report of Progress</b>	

Action Number:

TH-6

Mitigation Action Name:

Drainage improvements on golf course fairway number 13 and 16

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	
Cost-Effectiveness	1	
Technical	1	
Political	0	
Legal	1	Town has authority over project location
Fiscal	1	
Environmental	0	
Social	0	
Administrative	1	Town has administrative capability to manage project work.
Multi-Hazard	0	
Timeline	0	DOF
Agency Champion	1	Town Golf Dept.
Other Community Objectives	0	
<b>Total</b>	7	
<b>Priority (H/M/L)</b>	Medium	

**Name of Jurisdiction:** Town of Haverstraw  
**Name and Title Completing Worksheet:** Michael Gamboli Director of Finance  
**Action Number:** TH-7  
**Mitigation Action Name:** Maintenance of tributary Drainage and storm water infrastructure

Assessing the Risk	
<b>Hazard(s) addressed:</b>	Flooding
<b>Specific problem being mitigated:</b>	Storm Water Drainage
Evaluation of Potential Actions/Projects	
<b>Actions/Projects Considered (name of project and reason for not selecting):</b>	Improve and maintain Storm Water Control Systems
Action/Project Intended for Implementation	
<b>Description of Selected Action/Project</b>	
<b>Mitigation Action Type</b>	SIP and NSP
<b>Goals Met</b>	Protect properties in the Town
<b>Applies to existing and or new development, or not applicable</b>	New and existing
<b>Benefits (losses avoided)</b>	Property and Infrastructure
<b>Estimated Cost</b>	High>100,000
<b>Priority*</b>	High
Plan for Implementation	
<b>Responsible Organization</b>	Town of Haverstraw
<b>Local Planning Mechanism</b>	Town MS4 administrator
<b>Potential Funding Sources</b>	Town Funds
<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:

TH-7

Mitigation Action Name:

Maintenance of tributary Drainage and storm water infrastructure

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	
Fiscal	1	
Environmental	1	
Social	0	
Administrative	1	
Multi-Hazard	1	
Timeline	0	
Agency Champion	1	
Other Community Objectives	0	
<b>Total</b>	<b>10</b>	
<b>Priority (H/M/L)</b>	High	

**Name of Jurisdiction:** Town of Haverstraw  
**Name and Title Completing Worksheet:** Michael Gamboli Director of Finance  
**Action Number:** TH-8  
**Mitigation Action Name:** 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 Town to work with property owners to mitigate to 100-year flood event – not preferred, doesn't meet NYS DHSES guidelines
Action/Project Intended for Implementation	
<b>Description of Selected Action/Project</b>	The following critical facilities are located floodplain and identified as vulnerable to the flood hazard: Camp Ramaquois, Well #2, O&R Bowline Substation, and Bowline Point Gas Power Plant. The Town does not have jurisdiction over these facilities to mitigate. The Town will work with the Village and County to notify the facility manager/operator of these critical facilities regarding their flood vulnerability as identified during the Rockland County HMP update and NYS' requirement to protect to the 500-year flood or worst-case scenario. The Town will provide the owners information regarding grant options for funding to implement their mitigation action. Potential feasible projects may included the following. The private owners will need to determine the most cost effective and feasible mitigation action for these facilities: <ul style="list-style-type: none"> <li>• Elevate utilities/infrastructure</li> <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, like 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> <li>• Relocate 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 Property Owners' with Village support
<b>Local Planning Mechanism</b>	
<b>Potential Funding Sources</b>	Town Staff Time
<b>Timeline for Completion</b>	Short 1-5 years
<b>Reporting on Progress</b>	
<b>Date of Status Report/ Report of Progress</b>	Date: Progress on Action/Project:

**Action Number:** TH-8

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**Mitigation Action Name:** Critical facilities in the floodplain

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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	Town 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	



Action Number:

TH-9

Mitigation Action Name:

The David B Roche Fire Company building is located in the floodplain and identified as vulnerable to the flood hazard

Assessing the Risk	
<b>Hazard(s) addressed:</b>	Flooding
<b>Specific problem being mitigated:</b>	The David B Roche Fire Company building is located in the floodplain and identified as vulnerable to the flood hazard
Evaluation of Potential Actions/Projects	
<b>Actions/Projects Considered (name of project and reason for not selecting):</b>	Elevate utilities/infrastructure Ensure there is an alternate space identified to store the trucks and apparatus outside the floodplain Do Nothing
Action/Project Intended for Implementation	
<b>Description of Selected Action/Project</b>	The David B Roche Fire Company building is located in the floodplain and identified as vulnerable to the flood hazard. This building is owned by the Fire District; the Town does not have jurisdiction to mitigate the structure. The Town will work with the Fire District to notify them of the building's vulnerability and NYS' requirement to protect the structure to the 500-year or worst-case scenario. The Town will provide the Fire District options for grant funding to implement their selected mitigation action. Potential feasible projects may include the following. The Fire District will need to determine which is the cost-effective and feasible mitigation action for this building.
<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>	High
<b>Estimated Cost</b>	Low
<b>Priority*</b>	High
Plan for Implementation	
<b>Responsible Organization</b>	Fire District, Town support
<b>Local Planning Mechanism</b>	
<b>Potential Funding Sources</b>	Town funding
<b>Timeline for Completion</b>	Short
Reporting on Progress	
<b>Date of Status Report/ Report of Progress</b>	

Action Number:

TH-9

Mitigation Action Name:

The David B Roche Fire Company building is located in the floodplain and identified as vulnerable to the flood hazard

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	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
Property Protection	1	Protect critical facilities
Cost-Effectiveness	1	
Technical	1	
Political	0	
Legal	0	
Fiscal	0	
Environmental	0	
Social	1	
Administrative	1	
Multi-Hazard	1	
Timeline	1	
Agency Champion	1	
Other Community Objectives	1	
<b>Total</b>	9	
<b>Priority (H/M/L)</b>	High	