

10.2.17 Town of Highlands

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

10.2.17.1 Contacts

Primary and secondary contacts regarding this plan are identified as follows:

- Mervin “Bob” R. Livsey – Supervisor
254 Main Street
Highland Falls, NY 10928
(845) 446-4280 ext. 312
- June Gunza – Councilperson
(845) 446-4280
- James “Pat” Patterson – Highway Superintendent
1530 Route 9W
Highland Falls, NY 10928
(845) 446-3800

10.2.17.2 Municipal Profile

Population

The 2010 census reveals a population of twelve thousand, four hundred ninety-two (12,492) for a modest increase of eight (8) persons since the 2000 census of twelve thousand, four hundred eighty-four (12,484) persons.

Location

Located in the Hudson Highlands of northeastern Orange County, the Town of Highlands is bordered by the Towns of Cornwall to the northwest and Woodbury to the southwest. To the east, it is bordered by the Hudson River and counties of Putnam and Westchester. The Town of Highlands includes the Village of Highland Falls.

Brief History

Land grants to the area were established in 1723. Some seventy (70) years later, the U.S. government established West Point, at the time a military post and as of 1812 a military academy within the Town. Officially designated as a Town in 1872, Highlands was carved from the existing Town of Cornwall, becoming one of the last Towns to be incorporated within the County.

Governing Body

The Town is served by the Town Supervisor and a Town Council with four (4) Councilmembers. The Town Clerk is also an elected position.

Future Growth

Given the mostly stagnant population, not much growth is expected for the Town. Furthermore, the Town is limited by undevelopable areas due to geology and existing land use. Much of the Town is within West Point or the Palisades Park, both undevelopable. The only area of the Town that could see feasible development is in the residential area of Fort Montgomery.

10.2.17.3 Hazard Vulnerabilities and Ranking

Risk Ranking

The following table denotes the hazards selected and ranked by the jurisdiction. These were assessed in terms of event extent, frequency, warning, and length of event and recovery.

Table 10.2.17a: Hazard Vulnerability by Event		
Hazard Event	Vulnerability	Rank
Wildfire	Moderately High	1
Severe Storm	Moderately High	2
Extreme Temperatures	Moderately High	3
Hurricane	Moderately High	4
Earthquake	Moderately Low	5
Tornado	Moderately Low	6
Winter Storm	Moderately Low	7
Ice Storm	Moderately Low	8
Drought	Moderately Low	9
Flood	Low	10

Critical Facilities

The table below denotes selected critical facility parcel counts. These facilities are noted by the jurisdiction to inform decisions about potential mitigation actions to protect these infrastructures.

Table 10.2.17b: Critical Facility and Infrastructure Parcel Counts by Category			
Government	Municipal Utilities	Emergency Services	Educational
1	20	4	6

Locations of the government building, emergency services, and educational facilities are noted below. None of these facilities are located within the 500-year floodplain.

Table 10.2.17c: Location of CFI	
Facility Name	Address
Government	
Town Offices	254 Main Street
Emergency Services	
Fire Department	865 Route 9W, Fort Montgomery
Police	35 Main Street
Ambulance	37 Main Street
Educational	
Fort Montgomery Elementary	895 Route 9W
West Point Elementary	705A Barry Road
West Point Middle School	705 Barry Road
James I. O'Neill High School	21 Morgan Farm Road
Highland Falls Elementary	51 Mountain Avenue
Highland Falls Middle School	52 Mountain Avenue

The Town of Highlands has eight (8) critical facilities within the 500-year floodplain or the high hazard Landslide Rating¹ area. Two (2) of these facilities are located in both. Below is a table that identifies the structures and hazard issues.

Table 10.2.17d: Town of Highlands Critical Facilities and Infrastructure in Hazard Areas			
Critical Infrastructure	500-Yr Flood	Landslide Rating Area	Associated Mitigation Action
Brooks Hollow Dam	Y	Y	N/A
Lake Popolopen Dam	Y	N	N/A
Mine Lake Dam	Y	N	N/A
Popolopen Brook Dam	Y	N	N/A
Popolopen Lower Dam	Y	N	N/A
Queensboro Brook Dam	Y	N	N/A
Camp Buckner Mess Hall (West Point)	Y	N	N/A (USMA Jurisdiction)
Storm King State Park	Y	Y	N/A

As indicated in Section 2.8, participating municipalities did not wish to disclose the locations of public water systems facilities due to security concerns. However, they acknowledge the criticality of such facilities. While it is assumed that most municipal water systems facilities are not located within the floodplain, these jurisdictions will explore hardening/relocation

¹ Areas with a landslide rating in of greater than 37 are considered hazardous. The data was derived from HAZUS software analysis.

opportunities for those that are located within the floodplain should such actions become necessary due to the incidence of flooding impacts.

By necessity, critical wastewater facilities are located within the 500-year floodplain due to discharge requirements and gravity-fed systems optimization. While relocation is neither desired nor feasible, participating municipalities will seek to harden these facilities where feasibly and fiscally possible.

Table 2.8a – Orange County NPDES Data lists all wastewater facilities in the County, including the Town of Highlands, with a NPDES (National Pollutant Discharge Elimination System) permit. In the case of New York State, NPDES permit listing match State Pollutant Discharge Elimination System (SPDES) permit listings.

Priority Hazard Events

The following sections detail the priority hazard events identified by the jurisdiction. Additional information about each hazard including frequency, history, and severity within Orange County is included within Section 5.0 of the main body of the Hazard Mitigation Plan (Volume I).

The probability of climate-related hazard events is generally expected to increase in the future within the Town of Highlands. This anticipated increase results from the expected increase in weather volatility associated with climate change. Hudson River communities will also experience increased threat of flooding due to sea level rise.

Past occurrences of hazard events are indicated in their respective profiles below. Some hazards may not have locally available documentation of past occurrence, but are nonetheless profiled in this annex to instill future mitigation planning consideration.

Flood

The major hydrology influencing bodies for the Town are the Popolopen Creek drainage basin and the Hudson River to the east of the Town.

FEMA’s Flood Insurance Mapping Program designates areas that are at risk for flooding; low flood risk are areas unlikely to flood, moderate risk are areas within the 500-year floodplain (.2% likely to flood in any given year), and high risk are areas that frequently flood, up to the 100-year flood risk zone (1% likely to flood in any given year).

Table 10.2.17e: Summary Of Land Areas In Flood Hazard Areas <i>(Source: FEMA DFIRM Data 2011)</i>			
Total Land Area (Acres)	High Flood Risk (Acres)	Moderate Flood Risk (Acres)	Low Flood Risk (Acres)
	A, AE, AH, AO	X500	X
19,745	951 (5%)	31 (0%)	18,736

Additionally, five (5) percent of the Town’s improved value areas (defined as property that is either actively utilized or has been developed) are located within the high risk flood areas (95%

is within low risk areas). For more information regarding the Town's participation in the National Flood Insurance Program and on repetitive and severe repetitive loss properties, see Section 10.2.17.4-Capability Assessment later in this annex.

The majority of flooding in the Town is associated with Garrison Pond in the southeast corner of the Town.

Below is a table that illustrates the value of property in the Town of Highlands that is located within the 500-year floodplain and is categorized by land use type. This table was derived from FEMA floodplain mapping and parcel data from the Orange County Property Assessor.

Type of Structure	# Structures in Hazard Area	Value of Structures (in millions)
Residential	32	\$7.4
Commercial	3	\$1.2
Industrial	0	\$0
Agricultural	0	\$0
Religious/Non-profit	0	\$0
Government	0	\$0
Education	1	\$4.4
Utilities	0	\$0
Dams	1	Unknown
Parks	1	Unknown
Total	38	\$13.0

Historical Occurrence:

One (1) event was recorded specifically for the Town of Highlands within the past ten (10) years due to heavy rain events.

- October 8, 2005 – Flash flood. A state of emergency was declared for Town of Highlands, where up to four (4) feet of water covered Routes 293 and 9W.

Generally, flooding in the Town is limited to basements. This is due to the topography and lack of development within flood prone areas.

Extreme Temperatures

For a description of this hazard, please see section 5.1.

Historical Occurrence:

In the past ten (10) years there is no record of any Extreme Temperatures that have explicitly impacted the Town of Highlands however, there have been a number of recorded occurrences within Orange County. The information can be found in the main body of the document.

Severe Storm

The National Weather Service (NWS) defines a severe storm as one with a tornado and/or surface hail $\frac{3}{4}$ " or greater and/or wind gusts fifty (50) knots (kts) (58 mph) or greater. Such storms can cause damage from wind, hail, heavy rainfall, and/or lightning strikes.

Historical Occurrence:

Searching NOAA's Storm Events Database with the queries "Thunderstorm Wind", "High Wind", and "Hail" yielded one (1) events within and around the Town of Highlands.

- June 10, 2008 – Winds reported at sixty-one (61) kts (70 mph). Large tree fell onto a house on Cedar Lane.

It is important to note that these events generally affect large geographic areas and reports specific to municipalities aren't often recorded.

Hurricane

For a description of this hazard, please see section 5.3.

Historical Occurrence:

In the past ten (10) years there is no record of any Hurricanes that have explicitly impacted the Town of Highlands however, there have been a number of recorded occurrences within Orange County. The information can be found in the main body of the document. It is of note that hurricane threats could potential increase due to climate change trends.

Drought

Drought is not expected to have a major impact for the Town of Highlands. There is no agribusiness within the Town. These areas are the most vulnerable to drought. To a lesser extent, lack of precipitation for an extended period of time would impact recharge to the aquifers and groundwater wells that support the majority of the Town's water supply. Municipal water service is provided to a majority of the Town's population. This would mean the necessity for water restriction, which could impact manufacturing output.

Associated with drought and the vulnerability of the Town's water supply is the danger posed by the naturally occurring uranium found in well water across the Town of Highlands. Levels in excess of eight (8) times the maximum contaminant level (MCL) have been documented in the Town, according to a 1994 study by the Orange County Water Authority. Bringing these private well users onto a centralized treatment system would help to avoid such resulting health concerns and is addressed in action number TH-7.

Drought severity can be measured by the Palmer Drought Severity Index, which measures precipitation, soil moisture, and reservoir levels.

Historical Occurrence:

In the past ten (10) years there is no record of any Droughts that have explicitly impacted the Town of Highlands however, there have been a number of recorded occurrences within Orange County. The information can be found in the main body of the document.

Earthquake

Earthquakes are uncommon within the Town of Highlands. While there have been several earthquakes within the region, none have been above a 3.0 in magnitude. HAZUS software will only run scenarios of 5.0 magnitude or larger; with this knowledge, utilizing the location of the closest 5.0 magnitude to have occurred in the past (Bergen, NJ), no significant damage would occur to the Town of Highlands.

Winter Storm

For a description of this hazard, please see section 5.8.

Historical Occurrences:

In the past ten (10) years there is no record of any Winter Storms that have explicitly impacted the Town of Highlands however, there have been a number of recorded occurrences within Orange County. The information can be found in the main body of the document.

Wildfire

Wildfires can be caused by natural hazards (lightning) but are much more often manmade, either accidental in cause or arson. These most often occur during the summer, associated with the drier conditions which allow vegetation and brush to readily burn.

Due to the vast tracts of undeveloped land within the Town (particularly the Palisades Interstate Park and West Point Reserve), the wildfire ranked as the highest concern. According to the 2011 Orange County Hazard Mitigation Plan, the Town of Highlands ranked the highest for total area within a wildlife risk zone at seventy-nine (79) percent.

While the affected areas are usually uninhabited, these events can have long term implications on the Town's resources as well as discourage the tourism industry.

Historical Occurrence:

Numerous events have been reported by the Fort Montgomery Fire Department between the years of 1993-2007.

- 1993: 17
- 1994: 4
- 1995: 10
- 1996: 2
- 1997: 6
- 1998: 5
- 1999: 26
- 2000: 7
- 2001: 9
- 2002: 5
- 2003: 5
- 2004: 6
- 2005: 12
- 2006: 6
- 2007: 7

Table 5.9a in Section 5.9.3 indicates that the Town of Highlands experienced a wildfires-per-square-mile rate of 3.5-18.5 during the 2001 – 2015 timeframe.

Ice Storm

For a description of this hazard, please see section 5.8.

Historical Occurrence:

In the past ten (10) years there is no record of any Ice Storms that have explicitly impacted the Town of Highlands however, there have been a number of recorded occurrences within Orange County. The information can be found in the main body of the document.

10.2.17.4 Capability Assessment

Planning and Regulatory Capability

Table 10.2.17g: Legal and Regulatory Capabilities for Town of Highlands		
Regulatory Tools for Hazard Mitigation	Description	Responsible Department/Agency
Codes and/or Ordinances	<ul style="list-style-type: none"> • 2010 Residential Code of NYS • 2010 Fire Code of NYS • 2010 Building Code of NYS • 2010 Exiting Building Code of NYS • 2010 Energy Conservation Construction Code of NYS • 2010 Plumbing Code of NYS • 2010 Mechanical Code of NYS • 2010 Fuel Gas Code of NYS 	Building Department
	<ul style="list-style-type: none"> • Zoning Ordinance • Subdivision Ordinance • Floodplain Ordinance • Erosion Control and Stormwater Management Codes 	Planning Board

Table 10.2.17g: Legal and Regulatory Capabilities for Town of Highlands		
Regulatory Tools for Hazard Mitigation	Description	Responsible Department/Agency
Plans, Manuals, and/or Guidelines	<ul style="list-style-type: none"> Stormwater Management Comprehensive Plan (2009) Capital Improvements Plan (2015-2020) Economic Development Plan (2015-2020) 	Planning Board
Studies	<ul style="list-style-type: none"> FIRM Flood Insurance Rate Maps, 2009 	Town Board/Building Department

Administrative and Technical

Table 10.2.17h: Summary of Administrative and Technical Staff Capabilities for Town of Highlands		
Staff/Resources	<input checked="" type="checkbox"/>	Notes
Chief Building Official	<input checked="" type="checkbox"/>	Full Time
Floodplain Administrator	<input checked="" type="checkbox"/>	(Chief Building Official)
Emergency Manager	<input checked="" type="checkbox"/>	Part Time
Community Planner	-	
Civil Engineer	<input checked="" type="checkbox"/>	Part Time- Fusco Engineering
GIS Coordinator/HAZUS	-	*N/A
Grant Writer	-	*N/A
Maintenance Programs to Reduce Risk (tree trimming, etc.)	<input checked="" type="checkbox"/>	
Mutual Aid Agreements	<input checked="" type="checkbox"/>	
Warning Systems	-	

*N/A – indicates that such staff or personnel are not currently employed by the Town. Outside providers are often contracted by the Town to provide such services.

Fiscal Capabilities

Table 10.2.17i: Fiscal Opportunities for the Town of Highlands		
Financial Resources	Accessible or Eligible to Use (Yes, No, Don't Know)	Comments
Community Development Block Grants	Yes	Various projects
Capital Improvements Project funding	Don't Know	-
Authority to levy taxes for specific purposes	Yes	Various projects
Fees for water, sewer, gas, or electric service	No	-
Impact fees for homebuyers or new developments/homes	No	-
Incur debt through general obligation bonds	Yes	Various projects
Federal/State Funding	Yes	FEMA

NFIP: Administrator, Vulnerability, Resources, Compliance

As of January 31, 2018, there are two (2) NFIP policies active in the Town of Highlands for a total value of \$378,000. Since 1978, only \$270 of claims has been paid. According to Table 8.2c, there are no repetitive or severe repetitive flood loss properties within the Town of Highlands. More NFIP data can be found in Section 8.2.

The NFIP Administrator is the Chief Building Official and the Town is considered to be in good compliance. The Town has been maintaining NFIP participation by performing the duties and actions that were listed in the local laws that their municipal boards adopted. (Local Law #2 of 2009)

The Town's Floodplain Administrator has been provided a NFIP best practices incorporation guidance document and will be using it to improve local participation in NFIP standards going forward. This package of documents was provided by NYSDHSES and can be found in Appendix F - NFIP Floodplain Administrator Guidance Package.

*Hazard Mitigation: Existing and Planning Mechanisms*Emergency Communications, Routes, and Shelters:

Orange County utilizes the CodeRED system for emergency notifications. Residents can also visit the Town's website to sign up to receive text alerts regarding news from the Town of Highlands about closings, refuse schedule changes, police department notices, and like. The Town follows emergency route rules set by Orange County. The Town has one (1) designated emergency shelter: Fort Montgomery Fire Department (865 Route 9W, Fort Montgomery, NY 10922). More information on these sites can be found in Attachment III.

Comprehensive Plan:

The Town's Comprehensive Plan was adopted in 2009. This document does not address natural hazard event concerns.

Planning Mechanisms:

While this annex has provided a summary and description of existing plans, policies, and regulatory mechanisms that support hazard mitigation, the 2018 Orange County Hazard Mitigation Plan Update is intended to allow for the integration of its recommendations and data into local plans. Listed below are several planning and policy mechanisms that lend themselves to the integration of materials and objectives from this hazard mitigation plan. Columns to the right indicate whether the municipality has utilized hazard mitigation planning elements in the past (as in the aftermath of a previous local hazard mitigation plan) and whether they intend to be utilized in the future (which most, if not all, do).

Table 10.2.17j: Incorporation of Hazard Mitigation Planning into Existing and Future Planning Mechanisms		
Planning Mechanism	Has been Utilized	May be Utilized
Capital Improvement Budget: Hazard Mitigation Actions to be considered during the development of annual capital improvement plans. Compliance with Hazard Mitigation goals and objectives as well as the hazard vulnerability of site will be a consideration during the evaluation of infrastructure and facilities projects.	X	X
Operating Budget: Hazard Mitigation Actions to be considered within day-to-day operating budgets as funding permits.	X	X
Building & Zoning Ordinances: Review of the hazard mitigation plan and hazard analyses are part of the evaluation of land use, zoning, and development review ordinances and permitted processes.	X	X
Comprehensive Land Use Plan: Elements such as hazard vulnerability and hazard area extents will be considered during the development of future land use maps and other elements of comprehensive planning.	X	X
Human Resource Manual: Employee job descriptions may contain elements related to hazard mitigation planning and associated recommendations.		X
Grant Applications: Support for funding requests in the form of data, maps, and priority recommendations will be drawn from the hazard mitigation plan.	X	X
Fire Plan: Fire Plans for the municipality and local fire departments can utilize data and mapping in the hazard mitigation plan.	X	X
Local School Service Projects: Municipal officials and staff can explore the possibility of collaboration with local school districts to provide avenues for student community service projects as well as educational opportunities.		X
Economic Development: Local chambers of commerce and other economic development agencies can utilize the hazard mitigation plan to better inform new/expanding businesses in finding a location.		X

Summary

Currently, Town Code allows for regulations regarding Erosion Control and Stormwater Management. This Plan will be used to inform this document and provide guidance on actions moving forward.

10.2.17.5 Mitigation Strategy and Prioritization

Past, Completed, and Ongoing Initiatives

The Town has not completed any of the previously proposed actions from their 2009 as many are of an on-going nature. Others such as culvert upgrades and expansion of the Town’s potable water district have not been completed due to lack of sufficient funding. These actions have been re-issued in this plan as proposed actions.

Proposed Initiatives

Table 10.2.17k: Mitigation Actions/Projects Identified by Town of Highlands			
Action	Description	Involved Agency(ies)	Funding Source(s)
TH-1	During high rainfall periods, the Town Wastewater Treatment Plant experiences damage to structures and process equipment. Proposal is for a 300 foot long, eight (8) foot high concrete wall along the top of the bank as well as installation of riprap to protect facility from 500-yr flood event. Estimated cost is \$600,000.	Town Board, NYSDEC	FEMA, NYSDHSES, Orange County, Local Funding
TH-2	During high rainfall periods, culvert, residential structures, and roadways become damaged due to flooding associated with Firefighters Way. Proposal is for reconstruction of over 1,200 linear feet of stream banks and culverts to prevent further damage. Estimated cost of \$1,000,000.	Town Board, NYSDEC	FEMA, NYSDHSES, Orange County, Local Funding
TH-3	During high rainfall periods, damages to culverts, residential structures, and nearby pond damage on the Corbin Hill property. The installation of two (2) 60 foot long trench drains is proposed to keep floodwaters from damaging roadways, structures, and adding sediment to the pond. Estimated cost of \$50,000.	Town Board	FEMA, NYSDHSES, Orange County, Local Funding
TH-4	During severe storms, the Town experiences power outages to the Town Hall which is used as the Emergency Operations Center. The installation of a new back-up generator sized to accommodate the Town Hall would eliminate this loss of power. Estimated cost is \$140,000.	Town Board	FEMA, NYSDHSES, Orange County, Local Funding
TH-5	During high rainfall periods, residential areas around Garrison Pond experience damage to structures and roadways. The proposal is to dredge 6,000 cubic yards of sediment from the pond to allow for more stormwater retention. Estimated cost is \$800,000.	Town Board, NYSDEC	FEMA, NYSDHSES, Orange County, Local Funding
TH-6	The Town of Highlands currently has three (3) dams that need engineer analysis performed on them to determine if they are structurally sound. The estimated cost is \$80,000.	Town Board, NYSDEC	FEMA, NYSDHSES, Orange County, Local Funding
TH-7	The Town of Highlands currently operates a potable water distribution system that provides 100,000 gallons of potable water to approximately half the residences of the Town. With recent discovery of contaminants in local aquifers, the town would like to provide potable water access to the remainder of the town residences. The estimated cost is \$4,800,000.	Town Board	FEMA, NYSDHSES, Orange County, Local Funding
TH-8	During severe weather, the Town residents experience power outages, flooding, and damage to structures requiring residents to relocate to Emergency Shelters. At the present time, there are minimal locations within the town to take shelter. The construction of a 100 foot long by 50 foot wide second flood addition to the Fort Montgomery Fire Department would allow for the emergency housing of over 100 displaced residents for a prolonged period of time. Estimated cost is \$800,000.	Town Board	FEMA, NYSDHSES, Orange County, Local Funding

Table 10.2.17k: Mitigation Actions/Projects Identified by Town of Highlands			
Action	Description	Involved Agency(ies)	Funding Source(s)
TH -9	During severe weather, the Town of Highlands Police and Fire Departments have to place a boat into the Hudson River to make rescues. The construction of a 24 ft. wide by 70 ft. long concrete boat ramp along the top of the rivers banks would allow timely placement of a rescue boat into the Hudson. The estimated cost is \$120,000.	Town Board	FEMA, Orange County, Town of Highlands, NYSDHSES

STAPLEE forms were completed for each of these actions. A table with these evaluations can be found in Attachment II of this jurisdictional annex.

“STAPLEE” refers to the following lenses of evaluation: social, technological, administrative, political, legal, economic, and environmental.

Future Needs

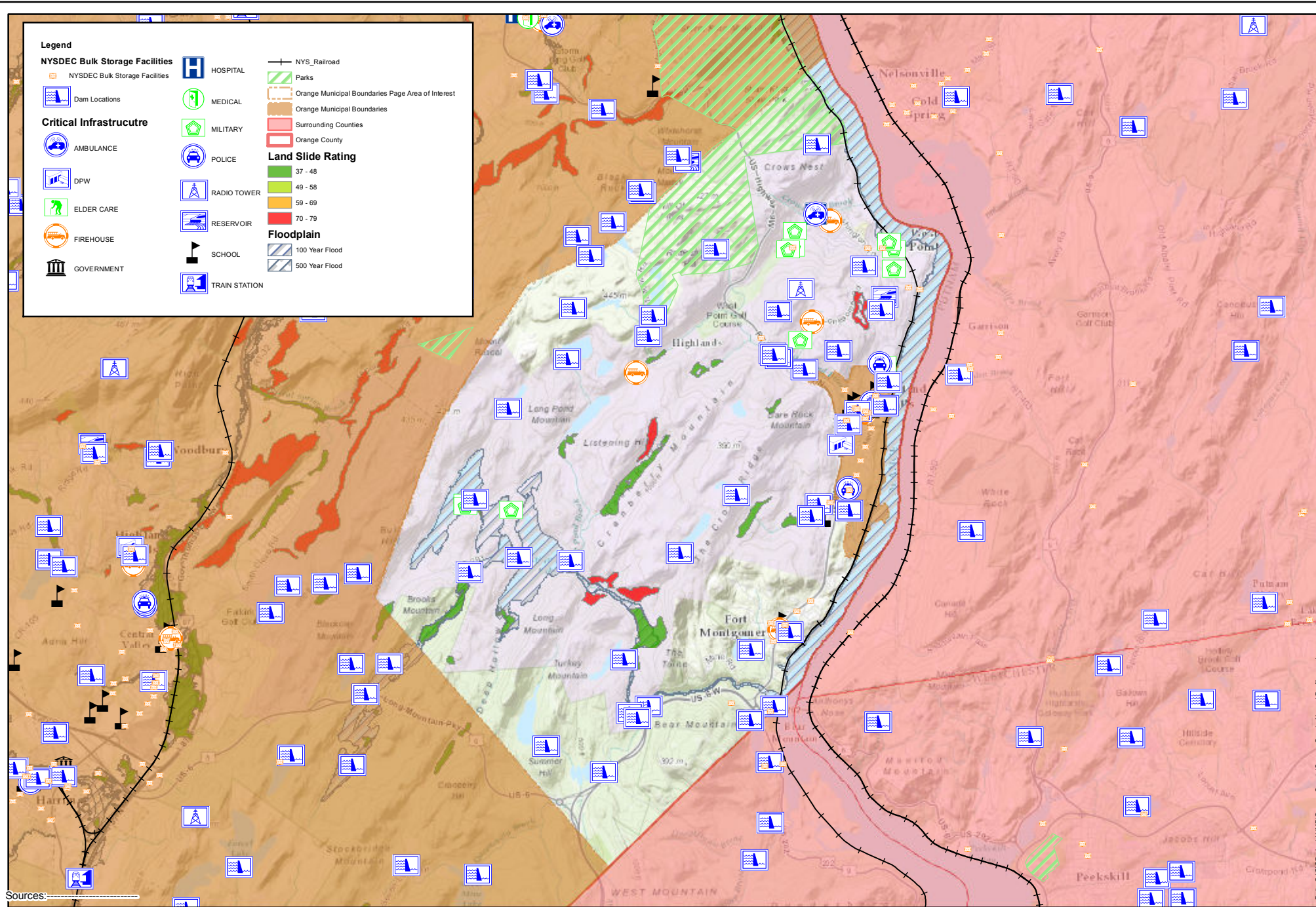
The Town has not identified any future needs.

10.2.17.6 Hazard Area Extent and Location

A map demonstrating the location of certain hazard areas is attached as Attachment I.

Attachment I

**Hazard Area Extent and Location Map -
Town of Highlands**



Sources: _____



Path: C:\chp\workspace\Orange County\Orange County Hazard Mitigation Plan

Attachment II

**STAPLEE Mitigation Action Cost/Benefit Analysis -
Town of Highlands**

STAPLEE Criteria Consideration Tables
Mitigation Action Prioritization and Comparison

Jurisdiction:

Town of Highlands

Action ID	Action	S	T	A	P	L	E	E	Can action be easily implemented?	Does action achieve multiple plan objectives?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
		+ = benefit (favorable), - = cost (unfavorable), 0 = neutral or N/A											Levels = high, medium, or low	
TH-1	Wastewater Treatment Plant Flood Mitigation - Concrete wall along the top of the bank as well as installation of riprap	+	+	-	+	+	-	+	-	+	-	High	High (\$600,000)	High
TH-2	Firefighters Way Flooding Rehabilitation - Reconstruction of stream banks and culverts to prevent further damage	+	+	-	+	+	-	+	-	+	-	High	High (\$1,000,000)	High
TH-3	Corbin Hill Flooding Rehabilitation - Installation of trench drains is proposed to keep floodwaters from damaging roadways, structures, and adding sediment to the pond	+	+	0	+	+	0	+	0	+	0	Medium	Medium (\$80,000)	Medium
TH-4	Installation of back-up generator sized to accommodate the Town Hall	+	+	0	+	+	0	0	+	+	+	High	Medium (\$150,000)	High
TH-5	Garrison Pond Restoration - Dredge sediment from the pond to allow for more stormwater retention	+	+	-	+	+	-	0	-	+	-	High	High (\$800,000)	High
TH-6	Town of Highlands Dam Study - Engineer analysis performed on three (3) dams	+	+	0	+	+	0	+	0	+	0	Medium	Medium (\$80,000)	Medium
TH-7	Town of Highlands Potable Water Extension - The town would like to provide potable water access to the remainder of the town residences	0	+	-	0	+	+	+	-	0	-	High	High (\$4,800,000)	High
TH-8	Town of Highlands Emergency Shelter - Second floor addition to the Fort Montgomery Fire Department	+	+	-	+	+	-	0	-	+	-	High	High (\$800,000)	Medium
TH-9	Mine Dock Boat Ramp - Concrete boat ramp along the top of the rivers bank would allow timely placement of a rescue boat	+	+	0	+	+	-	0	0	0	0	Medium	Medium (\$120,000)	Medium

Attachment III

**Hazard Mitigation Worksheets -
Town of Highlands**

Mitigation Actions and Strategy Detail Worksheet

Action Worksheet	
Name of Jurisdiction	Town of Highlands
Name of Hazard Mitigation Plan	Town of Highlands Hazard Mitigation Plan
Potential Actions/Projects (not being implemented at this time)	
Action/Project Number	Potable Water Relief – TOH-2015-007
Name of Action/Project	Town of Highlands Potable Water Extension
Summary of Evaluation: Benefits (losses avoided), estimated costs, and other factors considered	The Town of Highlands currently operates a potable water distribution system that provides 100,000 gallons of potable water to approximately half the residential homes within the town. With the recent discovery of contaminants in the local aquifers, the town would like to provide potable water access to the remainder of the town residences. The estimated cost is 4,800k and would eliminate a potential loss of life for residents that have no other option but to drink contaminated groundwater.
Plan for Implementation	
Responsible Organization	Town of Highlands Supervisor and Town Board
Action/Project Priority	Tier 1 – High priority
Potential Funding Sources	FEMA, SEMO, Orange County and the Town of Highlands
Other assisting organizations, entities, etc.	
Local planning mechanisms to be used	

in project/action implementation, if any	
Progress Report	
Date of status report	20 JAN 2016
Report of progress	Evaluation of funding potential against loss to be performed.
Evaluation of effectiveness	None at this time

Mitigation Actions and Strategy Detail Worksheet

Action Worksheet	
Name of Jurisdiction	Town of Highlands
Name of Hazard Mitigation Plan	Town of Highlands Hazard Mitigation Plan
Potential Actions/Projects (not being implemented at this time)	
Action/Project Number	Flooding Relief – TOH-2015-008
Name of Action/Project	Town of Highlands Emergency Shelter
Summary of Evaluation: Benefits (losses avoided), estimated costs, and other factors considered	During severe weather, the Town of Highlands residents experience power outages, flooding and damage to structures requiring residents to be relocated to an Emergency Shelter. At present time, there are minimal locations within the town to take shelter. The construction of a 100 foot long by 50 foot wide second floor addition to the Fort Montgomery Fire Department would allow for the emergency housing of over 100 displaced residents for a prolonged period of time. The estimated cost is 800k.
Plan for Implementation	
Responsible Organization	Town of Highlands Supervisor and Town Board
Action/Project Priority	Tier 2 – Medium priority
Potential Funding Sources	FEMA, SEMO, Orange County and the Town of Highlands
Other assisting organizations, entities,	

etc.	
Local planning mechanisms to be used in project/action implementation, if any	
Progress Report	
Date of status report	20 JAN 2016
Report of progress	Evaluation of funding potential against loss to be performed.
Evaluation of effectiveness	None at this time

Orange County
Multi-Jurisdictional All Natural Hazard Mitigation Plan
Emergency Shelter Questionnaire

Name of Your Municipality:	<u>Town of Highlands</u>
Common Name of Your Emergency Shelter:	<u>Fort Montgomery Fire Department Emergency Shelter</u>
Street Address of Your Emergency Shelter:	<u>865 Route 9W</u> <u>Fort Montgomery, NY 10922</u>
Name of the Owner of Your Emergency Shelter:	<u>Fort Montgomery Fire Department</u>
Name of the Regular Occupant of Your Emergency Shelter:	<u>Fort Montgomery Fire Department</u>

Name of Jurisdiction: _____

**RESOLUTION
TO AUTHORIZE THE ACCEPTANCE AND ADOPTION OF THE
MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN UPDATE FOR
ORANGE COUNTY, NEW YORK**

WHEREAS, the Orange County Department of Emergency Services, with the assistance from Barton & Loguidice, D.P.C., has gathered information and prepared the Multi-Jurisdictional Hazard Mitigation Plan Update for Orange County, New York; and

WHEREAS, the Multi-Jurisdictional Hazard Mitigation Plan Update for Orange County, New York has been prepared in accordance with the Disaster Mitigation Act of 2000 and Title 44 Code of Federal Regulations (CFR), Part 201; and

WHEREAS, Title 44 CFR, Chapter 1, Part 201.6(c)(5) requires each local government participating in the preparation of a Multi-Jurisdictional Mitigation Plan or Plan Update to accept and adopt such plan; and

WHEREAS, the Town of Highlands, has reviewed the 2016 Multi-Jurisdictional Hazard Mitigation Plan Update for Orange County, has found the document to be acceptable, and as a local unit of government, has afforded its citizens an opportunity to comment and provide input regarding the Plan Update and the actions included in the Plan;

WHEREAS, the Town of Highlands, will consider the Multi-Jurisdictional Hazard Mitigation Plan Update for Orange County during the implementation and updating of local planning mechanisms, and will incorporate the hazard assessment data, hazard vulnerabilities, and mitigation actions in these mechanisms, where applicable;

NOW THEREFORE, BE IT RESOLVED, that the Town of Highlands, as a participating jurisdiction, adopts the Multi-Jurisdictional Hazard Mitigation Plan Update for Orange County, New York, dated May 2016.

This resolution was thereupon declared duly adopted on _____.

(Supervisor)

(Clerk)