

### 10.2.6 Village of Cornwall-on-Hudson

This section presents the jurisdictional annex for the Village of Cornwall-on-Hudson. The Village of Cornwall-on-Hudson has a current hazard mitigation plan that was locally adopted on October 21, 2013.

#### 10.2.6.1 Contacts

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

- Brendan Coyne – Mayor  
325 Hudson St.  
Cornwall-on-Hudson, NY 12520  
(845) 534-4200
- Kurt Hahn – Town/Village Local Emergency Manager  
325 Hudson St.  
Cornwall-on-Hudson, NY 12520  
(845) 534-8100

#### 10.2.6.2 Municipal Profile

##### *Population*

According to the U.S. Census, the 2010 population for the Village of Cornwall-on-Hudson was three thousand, fifty (3,050), with a population density of one thousand, five hundred nineteen (1,519) persons per square mile. The population has decreased by 0.3% from the 2000 census of three thousand, fifty-eight (3,058).

##### *Location*

The Village of Cornwall-on-Hudson is located along the Hudson River approximately fifty (50) miles north of New York City in eastern Orange County, New York. The Village is within the Town of Cornwall, bordering the west shore of the Hudson River.

##### *Brief History*

The Town of Cornwall was explored by Henry Hudson in 1609, at the time the land was occupied by the Waoraneck Indians. In 1685 a colony of twenty-five Scottish families settled around the mouth of the Moodna Creek. The namesake for the Town and Village stemmed from when the English and Scotch families came to the fertile tableland above the river meadows naming it "new Cornwall" because of the marked similarity to the County of Cornwall, England.

The Village of Cornwall-on-Hudson was incorporated as a village in 1885. Willisville was an early name for Cornwall-on-Hudson. Settlement in the area occurred at Cornwall Landing, a

hamlet on the Hudson River below Butter Hill. It was the only river landing in the town. Cornwall Landing became a commercial hub with its own post office. The Landing began to decline after World War II when passenger train service ended and buildings were demolished.

In the early 1960s, Consolidated Edison announced plans for a proposed power plant on Storm King Mountain close to the river. However, an organized citizens' effort effectively thwarted the locally-unpopular project in a seventeen (17) year battle. This conflict ultimately gave birth to the modern environmental movement and Scenic Hudson.

In the aftermath of this struggle for the future of Cornwall Landing, Consolidated Edison transferred what had been property within the Village of Cornwall-on-Hudson borders to the Palisades Interstate Park Commission. Fortunately, the Village was able to negotiate the return of some of the riverfront acreage to allow the establishment of Donahue Memorial Park at Cornwall Landing.

### *Governing Body*

The Village of Cornwall-on-Hudson operates under the Board of Trustees form of municipal government. The Village Board of Trustees is comprised of the Mayor, Deputy Mayor and three (3) trustees who represent the governing and legislative body of the village, with the Mayor functioning as the administrative head of the local municipal government, managing the day-to-day affairs of the Village.

### *Future Growth*

The Village's population has fallen slightly in recent decades, falling from three thousand, one hundred sixty-four (3,164) in 1980 to three thousand, eighteen (3,018) in 2010. With much of the land within the Village already built-up or permanently preserved, future economic or residential development is likely to occur as redevelopment of existing properties.

### 10.2.6.3 Hazard Vulnerabilities and Ranking

The following represents the property at risk for each identified hazard in the Village of Cornwall-on-Hudson. Table 10.2.6a shows the exposure within the Village to each hazard and the aggregate value of structures and their contents. These values were obtained by identifying structures at risk from various hazards, adding up property values from the Assessor's records, and then adding contents values estimated using the FEMA methodology. Table 10.2.6b describes the FEMA contents value estimation method.

<b>Table 10.2.6a: Village Wide Hazards</b> (Source: New York State Division of Homeland Security and Emergency Services (DHSES))		
Hazard	Potential Risk	Total Value
Earthquakes	All areas of the Village of Cornwall-on-Hudson have at least some risk from identified hazards	\$10,202,631
Extreme Temperatures and Drought		
Flooding		
Windstorms (Hurricanes & Tropical Storms)		
Severe Winter Storms		
Landslides		

<b>Table 10.2.6b: Contents Value as Percentage of Building Replacement Value</b> (Source: New York State Division of Homeland Security and Emergency Services (DHSES))	
Occupancy Class	Contents Value (%)
Residential	50
Commercial	100
Medical	150
Parking	50
Industrial	150
Construction	100
Agriculture	100
Religious/Non-Profit	100
Emergency Response	150
Government	100
Schools/Libraries	100
Colleges/Universities	150

Critical Facilities

A list of community Critical Facilities was generated to aid in mitigation planning. The following table summarizes the number of these facilities within the Village of Cornwall-on-Hudson which may be impacted by any of the previously noted hazards. Critical facilities were identified by the Village as meeting this definition: “Any structure(s) and/or infrastructure within a community whose incapacity or destruction would:

- Have a debilitating impact on the defense or economic security of that community.
- Significantly hinder a community’s ability to recover following a disaster.”

Discretion was left up to the participating jurisdiction to select these facilities.

<b>Community</b>	<b>CFI</b>	<b>Mitigation Project</b>
Cornwall-on-Hudson	Black Rock Water Plant	Drainage and access road improvements
Cornwall-on-Hudson	Maple Road	Tank and PS drainage and protection improvements
Cornwall-on-Hudson	River Ave & Boulevard	Drainage improvements and road resurfacing.
Cornwall-on-Hudson	Catskill Treatment Plant	Drainage and protection improvements
Cornwall-on-Hudson	Lafayette Street	Provide drainage system
Cornwall-on-Hudson	Taylor Road	Well control and generator
Cornwall-on-Hudson	Wood Avenue	Drainage improvements and road resurfacing

The Village of Cornwall-on-Hudson has three (3) critical facilities within the 500-year floodplain or the high hazard Landslide Rating<sup>1</sup> area. Storm King State Park is the only one that is located in both. The following table identifies the structures and hazard issues.

<b>Critical Infrastructure</b>	<b>500-Yr Flood</b>	<b>Landslide Rating Area</b>	<b>Associated Mitigation Action</b>
Cornwall-on-Hudson Department of Public Works	Y	N	VCH-6
Scenic Technologies	Y	N	VCH-6
Storm King State Park	Y	Y	VCH-6

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 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 Village of Cornwall-on-Hudson, 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.

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

## **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). Table 10.2.6e shows the probability ranking assigned for likelihood of occurrence for each hazard for the Village.

The probability of climate-related hazard events is generally expected to increase in the future within the Village of Cornwall-on-Hudson. 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. The Moodna Creek Watershed also contributes to increased flooding occurrences.

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.

<b>Table 10.2.6e: Probability of Occurrence Ranking for Hazards of Concern</b>		
<b>Hazard</b>	<b>Probability</b>	<b>Value</b>
Flooding	Frequent	3
Severe Storms	Frequent	3
Severe Winter Storms	Frequent	3
Ice Storms	Frequent	3
Extreme Temperatures and Drought	Frequent	3
Windstorms	Frequent	3
Earthquakes	Rare	1
Landslides	Rare	1

### *Flood*

Areas of the Town and Village adjacent to the Moodna and Woodbury Creeks and the Hudson River are vulnerable to damaging floods on an annual basis. Orange County is ranked as the fifth-most flood vulnerable county in New York State, due to its flooding history and based on potential flood exposure and vulnerability to loss. The Town of Cornwall and the Village of Cornwall-on-Hudson have enacted and enforced floodplain management ordinances as required. Both communities also have Flood Insurance Rate Maps (FIRM's) that at a minimum show floodways, 100-year flood zones, and 500-year flood zones.

Table 10.2.6f: Summary of Land Areas in Flood Hazard Areas (Source: FEMA DFIRM Data 2016)						
Municipality	Total Land Area (Acres)	High Flood Risk (Acres)	Moderate Flood Risk (Acres)	Low Flood Risk (Acres)	Land in High Flood Risk %	Land in Moderate Flood Risk %
		A, AE, AH, AO	X500	X	A, AE, AH, AO	X500
Cornwall-on-Hudson, Village of	1,565	304	3	1,258	19%	0%

The following table illustrates the value of property in the Village of Cornwall-on-Hudson 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.

Table 10.2.6g: Structures in the Village of Cornwall-on-Hudson Vulnerable to 500-year Flood Events and Their Estimated Values		
Type of Structure	# Structures in Hazard Area	Value of Structures (in millions)
Residential	49	\$14.7
Commercial	2	\$0.7
Industrial	1	\$1.5
Agricultural	0	\$0
Religious/Non-profit	0	\$0
Government	1	\$0.6
Education	0	\$0
Utilities	0	\$0
Dams	0	\$0
Parks	1	Unknown
<b>Total</b>	<b>54</b>	<b>\$17.5</b>

Historical Occurrence:

Several historic major flooding events have affected the Village since 1999:

- September 2000 – three (3) to four (4) inch rainfall, significant serious street flooding along with some basement flooding in Cornwall.
- October 2005 – Heavy rain resulted in significant flooding on some rivers, most small brooks and streams and throughout urban areas in low lying and poor drainage areas, more than ten (10) inches of rain in Cornwall.
- July 2009 – Several streams exceeded bankfull in Cornwall-on Hudson.

*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 extreme temperatures that have explicitly impacted the Village of Cornwall-on-Hudson, 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 Thunderstorms, Wind, and Tornados*

Severe thunderstorms are common across the northeast; these storms typically form during the spring and summer months. A severe storm hazard event includes hail storms, windstorms, and severe thunderstorms (with associated severe wind events such as derechos, gustnados (ground based gust vortex), and downbursts). Serious injury or death is likely due to this hazard's relationships to motor vehicle accidents, wind damage, or other cascading effects. A severe storm may also result in moderate damage to private property and public facilities. Additional details of these various severe storms can be found in Section 5.0 of this report.

Historical Occurrence:

In the past ten (10) years there is no record of Severe Thunderstorms, Wind, or Tornados that have explicitly impacted the Village of Cornwall-on-Hudson, however, there have been a number of recorded occurrences within Orange County. The information can be found in the main body of the document.

*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 Village of Cornwall-on-Hudson, 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 potentially increase due to climate change trends.

### *Drought*

Drought could have significant impacts to the production in agricultural areas inside the Town of Cornwall. 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 Village's water supply. Within the Town, municipal water service is provided to a majority of the population in the Village of Cornwall-on-Hudson. This would mean the necessity for water restrictions, which could impact manufacturing output.

For residences, businesses, and institutions in Orange County, water is mostly sourced from groundwater aquifers: according to the Orange County Water Master Plan (August 2010), 56% of Orange County water supplies serving residences and businesses come from groundwater, with 33% from surface water and the remaining 11% from the New York City aqueduct system. The majority of the County water supply is provided by one hundred and sixty-one (161) community water supply systems drawing from reservoirs (29) and aquifers (132). The Village of Cornwall-on-Hudson draws its water supplies from the Catskill Aqueduct.

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 Droughts that have explicitly impacted the Village of Cornwall-on-Hudson, however, there have been a number of recorded occurrences within Orange County. The information can be found in the main body of the document.

### *Landslide*

Landslides occur when a slope fails and moves downward due to gravity; this can be caused by anything that disrupts ground stability, from storms to acts of man. The New York State Geological Survey denotes areas with steep slopes and glacial lake clay soils as landslide vulnerable. There are areas within the Village of Cornwall-on-Hudson that meet these criteria. The Village has areas with steep slopes and ridgelines, these step terrain areas are generally wooded, increasing the probability for a potential landslide in the future. Analysis of critical facilities that fall into these high landslide rating areas can be found in Table 10.2.6d and in Attachment I.

The following table illustrates the value of property in the Village of Cornwall-on-Hudson that is located within the landslide rating area and is categorized by land use type. This table was derived from GIS mapping and parcel data from the Orange County Property Assessor.



<b>Table 10.2.4h: Structures in the Village of Cornwall-on-Hudson Vulnerable to Landslide Events and Their Estimated Values</b>		
<b>Type of Structure</b>	<b># Structures in Hazard Area</b>	<b>Value of Structures (in millions)</b>
Residential	66	\$19.8
Commercial	63	Unknown
Industrial	0	\$0.0
Agricultural	0	\$0.0
Religious/Non-profit	0	\$0.0
Government	0	\$0.0
Education	0	\$0.0
Utilities	0	\$0.0
Dams	0	\$0.0
Parks	1	Unknown
<b>Total</b>	<b>130</b>	<b>\$19.8</b>

#### Historical Occurrences:

In the past ten (10) years there is no record of Landslides that have explicitly impacted the Village of Cornwall-on-Hudson 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 Village of Cornwall-on-Hudson. While there have been several earthquakes within the region, none have been above a 3.0 in magnitude. However, there have been several earthquakes in and around Orange County that are outlined in the main body of this document.

#### *Winter Storms*

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

#### Historical Occurrence:

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

#### *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 Ice Storms that have explicitly impacted the Village of Cornwall-on-Hudson, 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*

For a description of this hazard, please see section 5.9.

One of the major contributing factors to severity of wildfires depends on the presence of humans within areas where wildfires would typically occur. The Wildland/Urban Interface (WUI) is the area where houses and wildland vegetation meet. Housing developments alter the structure and function of forests. Wildfires are common in forests they help to cycle nutrients within forests as well as removal of combustible debris. However, with human lives and structures mixed into the equation, wildfires need to be controlled and manipulated. This manipulation results in fewer wildfires which results in the accumulation of combustible materials, which can lead to larger more intense wildfires. The 2014 Annual Report for the NYSDEC Division of Forest Protection indicates that there were twenty-three (23) wildfires within Zone 3B which includes the Village of Cornwall-on-Hudson. These wildfires burnt a total of two hundred thirty-nine (239) acres; none of these wildfires were over one hundred (100) acres in size.

*Ice Jam*

For a description of this hazard, please see section 5.10.

Historical Occurrence:

According to the U.S. Army Corps of Engineers (USACE) Cold Regions Research and Engineering Laboratory (CRREL) Ice Jam Database, the Village of Cornwall-on-Hudson experienced one (1) ice jam in 1999.

- On Sunday, January 24, 1999, Ulster County Officials reported an ice jam on the Verkeerder Kill along the Ulster and Orange County Border. It is in the vicinity of the confluence of the Verkeerder Kill and Shawangunk Kill rivers in Crawford, New York. Ulsterville Road from the intersection of Pirog Road south into the Village of Cornwall-on-Hudson in Orange County was closed. A bridge near the intersections of Ulsterville Road, Pirog Road, and Gillespie Street was flooded with four (4) to five (5) feet of water. At 11:25 p.m. on Sunday, it was reported that the ice jam had diminished. Crawford Police Officials reported that Ulsterville Road was reopened and flood waters had receded.

Probability of Future Events:

It is possible that future ice jams will impact the Village of Cornwall-on-Hudson. Ice jams are not a common event for the Village. The best way to reduce future impacts is through organized planning and proper response. Community and municipal response and action are key to reducing impacts and damages from ice jam events.

### 10.2.6.5 Capability Assessment

#### *Planning and Regulatory Capability*

The following table summarizes the regulatory tools that are available to the municipality.

<b>Table 10.2.6i: Planning and Regulatory Tools</b>				
<b>Tool/Program (Code, Ordinance, Plan)</b>	<b>Status: Do you have this? (Y/N)</b>	<b>Authority (Local, County, State, Federal)</b>	<b>Dept./Agency Responsible</b>	<b>Code Citation and Comments (Code Chapter, date of adoption, name of plan, explanation of authority, etc.)</b>
Building Code	Y	Local, State, Federal	Planning and Building	International codes 2010 Edition
Zoning Ordinance	Y	Local	Planning and Building	It is adequately administrated and enforced.
Subdivision Ordinance	Y	Local, State	Village Board, Village Planning Board	It is adequately administrated and enforced.
NFIP Flood Damage Protection Ordinance	Y	Local, State, Federal	Village Board, Building Inspector	Chapter 124 Flood Damage Prevention, Adopted 7/18/1988, updated May 2010
NFIP - Freeboard	Y	State, Federal	Village Board, Village Building Inspector	State mandated BFE+2 for single and two-family residential construction, BFE+1 for all other construction types
NFIP - Cumulative Substantial Damages	N			
Special Purpose Ordinances (e.g. wetlands, critical or sensitive areas)	Y	Local, State, Federal	Village Board, Village Planning Board	
Growth Management	N			
Floodplain Management/Basin Plan	Y	Local, State	Village Board	
Stormwater Management Plan/Ordinance	Y	Local, State	Village Dept. Public Works	MS-4 Partial
Comprehensive Plan/Master Plan	Y	Local	Village Board	Adopted March 13, 2012
Capital Improvements Plan	N			
Site Plan Review Requirements	Y	Local, State, Federal	Village Board, Village Building Inspector	
Economic Development Plan	N			
Emergency Response Plan	Y	Local, State	Village Board, DPW, Police Dept.	
Post Disaster Recovery Plan	Y	Local, State	Village Board	
Post Disaster Recovery Ordinance	Y	Local, State	Village Board	

#### *Administrative and Technical*

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

<b>Table 10.2.6j: Administrative and Technical Capabilities</b>		
<b>Available Staff/ Personnel Resources</b>	<b>(Y or N)</b>	<b>Department/Agency/Position</b>
Planner(s) or Engineer(s) with knowledge of land development and land management practices	Y	Planner - Leslie Dorson, Garond Assoc.
Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Building Inspector, Chief Building Official- Gary Vinson
Planners or engineers with an understanding of natural hazards	Y	Civil Engineer
NFIP Floodplain Administrator	Y	Building Inspector
Surveyor(s)	Unknown	
Personnel skilled or trained in "GIS" applications	Unknown	
Scientist familiar with natural hazards in the County.	N	
Emergency Manager	Y	Kurt W. Hahn
Grant Writer(s)	N	
Staff with expertise or training in benefit/cost analysis	Unknown	
Professionals trained in conducting damage assessments	Unknown	

*Fiscal*

<b>Table 10.2.6k: Fiscal Capabilities Identified by Village of Cornwall-on-Hudson</b>						
<b>Funding Source</b>	<b>Earthquakes</b>	<b>Extreme Temperatures</b>	<b>Flooding</b>	<b>Windstorms</b>	<b>Winter Storms</b>	<b>Landslides</b>
Community Assistance Program-State Support Services Element (NFIP)			+			
Community Development Block Grant/Economic Development Initiative			+	+		
Community Development Block Grant/Entitlement Grant	+	+	+	+	+	+
Community Development Block Grant/Small Cities Program	+	+	+	+	+	+
Community Disaster Loan	+	+	+	+	+	+
Cooperative Forestry Research						+
Emergency Community Water Assistance Grants			+			

Table 10.2.6k: Fiscal Capabilities Identified by Village of Cornwall-on-Hudson						
Funding Source	Earthquakes	Extreme Temperatures	Flooding	Windstorms	Winter Storms	Landslides
Emergency Conservation Program			+			
Emergency Flood and Shelter National Board Program	+	+	+	+	+	+
Emergency Management Institute Training Assistance	+	+	+	+	+	+
Emergency Rehabilitation of Flood control Works			+			
Flood Plain Management Services			+			
Hazard Mitigation Grant Program	+	+	+	+	+	+
Project Impact: Building Disaster Resistant Communities	+	+	+	+	+	+
Public Assistance Grant Program	+	+	+	+	+	+

*National Flood Insurance Program:*

Table 10.2.6l: National Flood Insurance Program (NFIP) Summary					
Jurisdiction	# Policies	# Claims (Losses)	Total Loss Payments	# Rep. Loss Prop.	# Severe Rep. Loss Prop.
Cornwall-on-Hudson	16	11	\$47,372	0	0

The Village of Cornwall-On-Hudson has sixteen (16) current National Flood Insurance Program policies and has had eleven (11) flood insurance claims since 1978. The total flood insurance in force is \$4,438,000 and the total premium is 17,234. The Village is in good standing with the NFIP and there are no outstanding compliance issues. As shown in Table 8.2c, there are no repetitive loss or severe repetitive flood loss properties in the Village.

Administration is provided through the Village Planning Board. The Village 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 #3 of 2005). The Village 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:

The Village of Cornwall-on-Hudson is offering a new emergency notification within the Village. In an emergency, residents will receive messages from the Department of Public Works, Water, Mayor, Clerk or Fire. Orange County uses the CodeRED system for emergency notification. The Village follows emergency route rules set by Orange County. The Village has one (1) designated emergency shelter: Munger Cottage (40 Munger Drive, Cornwall, NY 12518). More information on these sites can be found in Attachment III.

### Comprehensive Plan:

The Village's Comprehensive Plan was adopted in June 21, 2007. Section 3.2 of that plan discusses the need for disaster planning, although it is more concerned with disaster response. The plan discusses existing conditions, goals and objectives adopted related to economic development, land use, zoning, environmental preservation issues, as well as public accommodations and municipal facilities.

### 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 10.2.6m: Incorporation of Hazard Mitigation Planning into Existing and Future Planning Mechanisms		
Planning Mechanism	Has been Utilized	May be Utilized
<b>Capital Improvement Budget:</b> 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
<b>Operating Budget:</b> Hazard Mitigation Actions to be considered within day-to-day operating budgets as funding permits.	X	X
<b>Building &amp; Zoning Ordinances:</b> 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
<b>Comprehensive Land Use Plan:</b> 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
<b>Human Resource Manual:</b> Employee job descriptions may contain elements related to hazard mitigation planning and associated recommendations.		X
<b>Grant Applications:</b> Support for funding requests in the form of data, maps, and priority recommendations will be drawn from the hazard mitigation plan.	X	X
<b>Fire Plan:</b> Fire Plans for the municipality and local fire departments can utilize data and mapping in the hazard mitigation plan.	X	X
<b>Local School Service Projects:</b> 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
<b>Economic Development:</b> 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

### 10.2.6.6 Mitigation Strategy and Prioritization

#### *Past, Completed, and Ongoing Initiatives*

The actions listed in the Village of Cornwall-on-Hudson's previous local hazard mitigation plan have not yet been completed due to lack of funding and have carried over into this plan update.

## Proposed Initiatives

Table 10.2.3n: Mitigation Actions/Projects Identified				
Action	Description	Involved Agency(ies)	Funding Source(s)	Cost
VCH-1	Provide hazard mitigation information at various locations throughout the Town and Village; primary location for information including emergency preparedness lists, flood plain maps, and NFIP information will be the Town and Village websites	Police and Fire Departments	FEMA Hazard Mitigation Grant (HMGP), FEMA Pre-Disaster Mitigation Funds (PDM), NYS Division of Homeland Security & Emergency Services	Low
VCH-2	Provide existing emergency preparedness lists and NFIP information to residents in high-risk flood areas	Supervisor/Mayor's Office, Police and Fire Departments, Highway Dept/DPW	Federal/State/Town/Village	Low
VCH-3	Continue training Town and Village staff within the National Incident Management System (NIMS)	Supervisor/Mayor's Office	Town/Village	Medium
VCH-4	Construct mitigation or relocate structures as necessary within flood prone areas	Village Board, Village Consulting Engineer	FEMA Hazard Mitigation Grant (HMGP), FEMA Pre-Disaster Mitigation Funds (PDM)	Medium
VCH-5	Identify, map and publicize the reception centers throughout the Town and Village	Police Department and School District	FEMA Hazard Mitigation Grant (HMGP), FEMA Pre-Disaster Mitigation Funds (PDM), NYS DHSES	Low
VCH-6	Obtain funding to purchase or replace emergency standby generators for critical facilities like the Village DPW	Village Board, Village Consulting Engineer	FEMA Hazard Mitigation Grant (HMGP), FEMA Pre-Disaster Mitigation Funds (PDM)	Medium
VCH-7	Obtain funding to purchase or replace equipment and supplies utilized by the Town Highway Department and Village DPW during winter storm events	Highway Dept., DPW	Village	Medium
VCH-8	Construct channel stabilization measure including retaining wall and bridge replacements	DPW, Village Consultant Engineer	FEMA Hazard Mitigation Grant (HMGP), FEMA Pre-Disaster Mitigation Funds (PDM), NYS DHSES	High
VCH-9	Drainage improvements to Mountain Road. Projects include installation of larger diameter pipes along a 1.5 mile stretch of the road between Routes 218 and 9W, replacement of one bridge/box culvert, resurfacing of roadway, and add support for water system.	DPW, Village Board	FEMA Hazard Mitigation Grant (HMGP), FEMA Pre-Disaster Mitigation Funds (PDM), NYS Division of Homeland Security & Emergency Services	Medium



Table 10.2.3n: Mitigation Actions/Projects Identified				
Action	Description	Involved Agency(ies)	Funding Source(s)	Cost
VCH-10	Drainage improvements to Boulevard. Projects include installation of larger diameter pipes from the Village line to the Museum of Hudson Highlands, resurfacing roadway, and add support for water system.	DPW, Village Board	FEMA Hazard Mitigation Grant (HMGP), FEMA Pre-Disaster Mitigation Funds (PDM), NYS Division of Homeland Security & Emergency Services	Medium

The following two tables provide general guidance toward prioritizing and pursuing funding for hazard mitigation projects.

Table 10.2.6o: General Potential Funding Sources						
Funding Source	Earthquakes	Extreme Temperatures	Flooding	Windstorms	Winter Storms	Landslides
Community Assistance Program-State Support Services Element (NFIP)			+			
Community Development Block Grant/Economic Development Initiative			+	+		
Community Development Block Grant/Entitlement Grant	+	+	+	+	+	+
Community Development Block Grant/Small Cities Program	+	+	+	+	+	+
Community Disaster Loan	+	+	+	+	+	+
Cooperative Forestry Research						+
Emergency Community Water Assistance Grants			+			
Emergency Conservation Program			+			
Emergency Flood and Shelter National Board Program	+	+	+	+	+	+
Emergency Management Institute Training Assistance	+	+	+	+	+	+
Emergency Rehabilitation of Flood control Works			+			
Flood Plain Management Services			+			
Hazard Mitigation Grant Program	+	+	+	+	+	+
Project Impact: Building Disaster Resistant Communities	+	+	+	+	+	+
Public Assistance Grant Program	+	+	+	+	+	+

<b>Table 10.2.6p: General Prioritization of Proposed Mitigation Actions</b>		
<b>Strategy</b>	<b>Priority</b>	<b>Potential Implementation Barriers</b>
Hazard Awareness	High	Administrative/Economic
Flood Education and Evacuation Routes	High	Administrative/Economic
Training	High	Administrative
Flood Proofing and Structural Measures	High	Social/Technical/Administrative/ Legal/Economic
Reception Centers	High	Administrative/Economic
Generators	High	Administrative/Economic
Winter Storm Preparedness	Moderate	Economic/Environmental
Channel Stabilization	Moderate	Social/Political/Legal/Economic

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

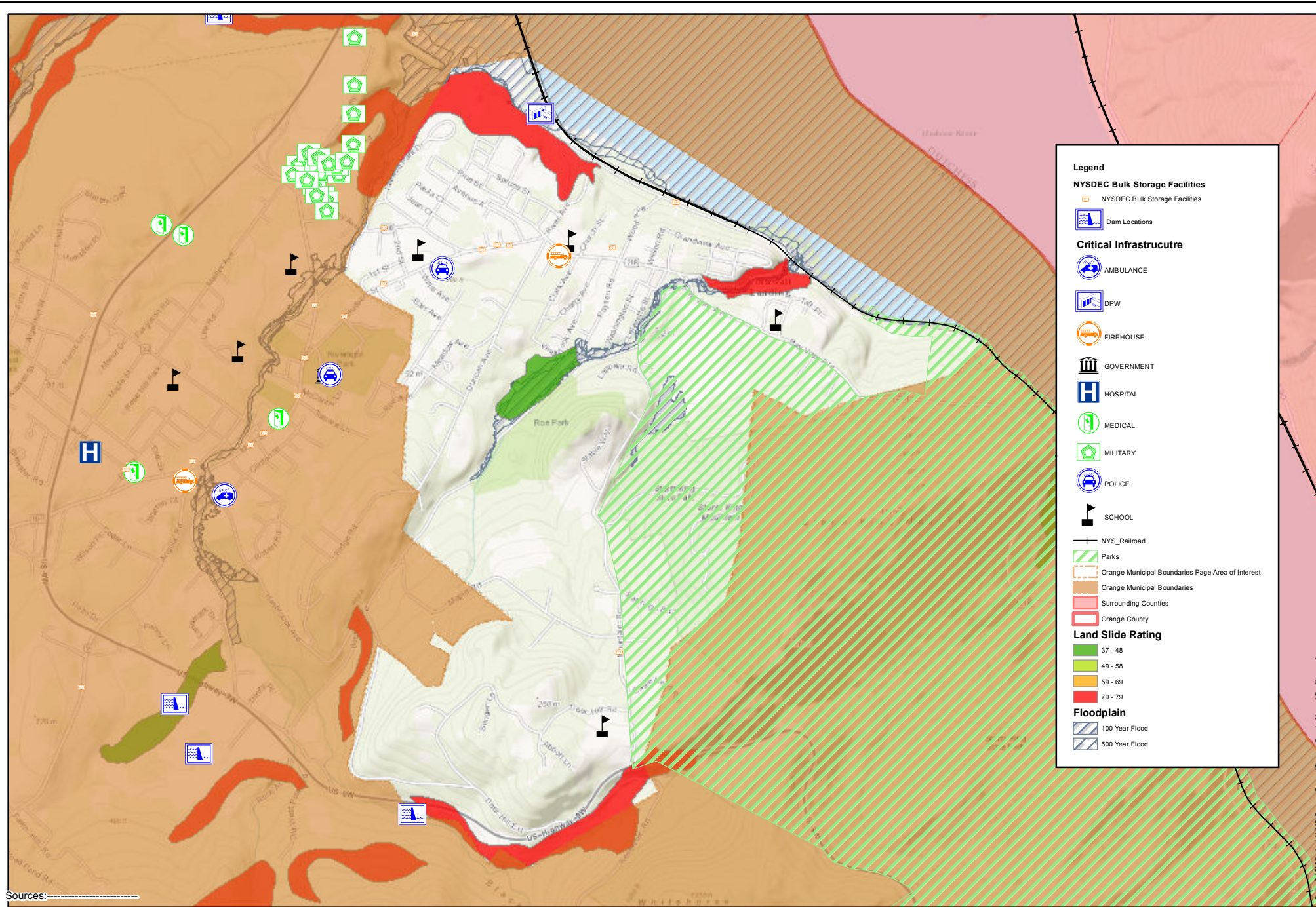
“STAPLEE” refers to the following lenses of evaluation: social, technological, administrative, political, legal, economic, and environmental.

**10.2.6.7 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 - Village of Cornwall-on-Hudson**



**Legend**

**NYSDEC Bulk Storage Facilities**

- NYSDEC Bulk Storage Facilities

**Dam Locations**

- Dam Locations

**Critical Infrastructure**

- AMBULANCE
- DPW
- FIREHOUSE
- GOVERNMENT
- HOSPITAL
- MEDICAL
- MILITARY
- POLICE
- SCHOOL

**NYS\_Railroad**

- NYS\_Railroad

**Parks**

- Parks

**Orange Municipal Boundaries Page Area of Interest**

- Orange Municipal Boundaries Page Area of Interest

**Orange Municipal Boundaries**

- Orange Municipal Boundaries

**Surrounding Counties**

- Surrounding Counties

**Orange County**

- Orange County

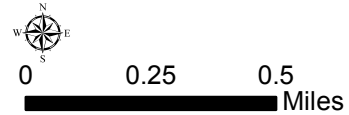
**Land Slide Rating**

- 37 - 48
- 49 - 58
- 59 - 69
- 70 - 79

**Floodplain**

- 100 Year Flood
- 500 Year Flood

Sources: \_\_\_\_\_



Path: C:\Users\jgarcia\Documents\Orange County Hazard Mitigation Plan\Figures.mxd

## **Attachment II**

# **STAPLEE Mitigation Action Cost/Benefit Analysis - Village of Cornwall-on-Hudson**

**STAPLEE Criteria Consideration Tables**  
**Mitigation Action Prioritization and Comparison**

Jurisdiction:

Village of Cornwall-on-Hudson

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	
CH-1	Provide hazard mitigation information at various locations throughout the Town and Village; primary location for information including emergency preparedness lists, flood plain maps, and NFIP information will be the Town and Village websites	+	+	-	+	0	-	+	+	+	+	High	Low	High
CH-2	Provide existing emergency preparedness lists and NFIP information to residents in high-risk flood areas	+	+	+	+	+	+	+	+	+	+	Medium	Low	High
CH-3	Continue training Town and Village staff within the National Incident Management System (NIMS)	+	+	+	+	+	+	+	+	+	+	Medium	Medium	High
CH-4	Construct mitigation or relocate structures as necessary within flood prone areas	0	-	0	0	-	-	+	-	+	0	Medium	Medium	High
CH-5	Identify, map and publicize the reception centers throughout the Town and Village	0	0	-	+	-	-	+	+	0	+	Medium	Low	High
CH-6	Obtain funding to purchase or replace emergency standby generators for critical facilities like the Village DPW	+	0	0	+	+	-	+	+	+	0	Medium	Medium	High
CH-7	Obtain funding to purchase or replace equipment and supplies utilized by the Town Highway Department and Village DPW during winter storm events	+	+	0	+	+	-	-	+	+	+	Medium	Medium	Medium
CH-8	Construct channel stabilization measure including retaining wall and bridge replacements	-	0	0	-	0	-	+	0	0	0	Medium	High	Medium
CH-9	Drainage improvements to Mountain Road. Projects include installation of larger diameter pipes along a 1.5 mile stretch of the road between Routes 218 and 9W, replacement of one bridge/box culvert, resurfacing of roadway, and add support for water system.	+	+	+	+	0	-	+	0	+	-	High	Medium	Medium

**STAPLEE Criteria Consideration Tables**  
**Mitigation Action Prioritization and Comparison**

Jurisdiction: Village of Cornwall-on-Hudson

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			
CH-10	Drainage improvements to Boulevard. Projects include installation of larger diameter pipes from the Village line to the Museum of Hudson Highlands, resurfacing roadway, and add support for water system.	+	+	+	+	0	-	+	0	+	-	High	Medium	Medium

**Attachment III**

**Hazard Mitigation Worksheets -  
Village of Cornwall-on-Hudson**



## Mitigation Actions and Strategy Detail Worksheet

<b>Action Worksheet</b>	
Name of Jurisdiction	Village of Cornwall-on-Hudson
Name of Hazard Mitigation Plan	Orange County Multi-Jurisdictional Hazard Mitigation Plan
<b>Potential Actions/Projects (not being implemented at this time)</b>	
Action/Project Number	CH - 6
Name of Action/Project	Emergency Generators
Summary of Evaluation: Benefits (losses avoided), estimated costs, and other factors considered	Obtain funding to purchase or replace emergency standby generators for critical facilities.
<b>Plan for Implementation</b>	
Responsible Organization	Village Board
Action/Project Priority	High
Potential Funding Sources	HMGP, PDM, CDBG
Other assisting organizations, entities, etc.	N/A
Local planning mechanisms to be used in project/action implementation, if any	N/A
<b>Progress Report</b>	
Date of status report	
Report of progress	
Evaluation of effectiveness	

## Mitigation Actions and Strategy Detail Worksheet

<b>Action Worksheet</b>	
Name of Jurisdiction	Village of Cornwall-on-Hudson
Name of Hazard Mitigation Plan	Orange County Multi-Jurisdictional Hazard Mitigation Plan
<b>Potential Actions/Projects (not being implemented at this time)</b>	
Action/Project Number	VCH - 10
Name of Action/Project	Drainage improvements to Boulevard.
Summary of Evaluation: Benefits (losses avoided), estimated costs, and other factors considered	Drainage improvements to Boulevard. Project include installation of larger diameter pipes from the Village line to the Museum of Hudson Highlands, resurfacing roadway, and add support for water system.
<b>Plan for Implementation</b>	
Responsible Organization	Village Board, Village Engineer, Village DPW
Action/Project Priority	High
Potential Funding Sources	HMGP, PDM
Other assisting organizations, entities, etc.	N/A
Local planning mechanisms to be used in project/action implementation, if any	N/A
<b>Progress Report</b>	
Date of status report	
Report of progress	
Evaluation of effectiveness	

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

Name of Your Municipality:	<u>Village of Cornwall-on-Hudson</u>
Common Name of Your Emergency Shelter:	<u>Munger Cottage</u>
Street Address of Your Emergency Shelter:	<u>40 Munger Drive</u>
	<u>Cornwall, NY 12518</u>
Name of the Owner of Your Emergency Shelter:	<u>Town of Cornwall</u>
Name of the Regular Occupant of Your Emergency Shelter:	<u>Various Community Groups use the space</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 Village of Cornwall-on-Hudson, 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 Village of Cornwall-on-Hudson, 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 Village of Cornwall-on-Hudson, 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 \_\_\_\_\_.

\_\_\_\_\_  
(Mayor)

\_\_\_\_\_  
(Clerk)