

8.4 - Jurisdictional Annex, Village of Castleton-on-Hudson

This section presents the jurisdictional annex for the Village of Castleton-on-Hudson. The jurisdiction’s governing body passed a formal resolution to participate in this multi-jurisdictional hazard mitigation plan update. A copy of their resolution is maintained at the local government offices and at the Rensselaer County Bureau of Public Safety.

8.4.1 Contact Information

The jurisdiction’s resolution to participate identified a Primary Point of Contact and an Alternate for this hazard mitigation plan update. These individuals represented the jurisdiction on the county-wide Core Planning Group and led a local team of Jurisdictional Assessment Team Members who undertook various local activities related to the plan update.

HAZARD MITIGATION PLAN POINTS OF CONTACT						
Primary Point of Contact			Alternate Point of Contact			
Name: Jennifer Pratico Title: Trustee Address: 85 South Main Street Castleton-on-Hudson, NY 12033 Phone Number: 518-330-0518 E-mail Address: jefinerp@yahoo.com			Name: Robert Schmidt Title: Mayor Address: 85 South Main Street Castleton-on-Hudson, NY 12033 Phone Number: 518-764-0802 E-mail Address: hpanalyst@aol.com			
Jurisdictional Assessment Team Members						
Local Jurisdiction Role/Position	Name	Email	Phone	Date of Invitation	Method of Invitation	Agreed to participate?
Land Use/Community Planner	Carol Stockman, Planning Board Head	cssstockman@yahoo.com	518-369-9521	February 2019	email	yes
Emergency Manager	Robert Schmidt, Mayor	hpanalyst@aol.com	518-764-0802	self	self	yes
Floodplain Manager/Administrator	Gary Ziegler, Building Inspector	buildingdepartment@rvcap.ny.us	518-605-2184	February 2019	board meeting	yes
Public Works Director / City Engineer	Rich Saville, DPW Director	castletonhighway@verizon.net	518-369-2423	February 2019	board meeting	yes
Building Code Official	Gary Ziegler, Building Inspector	buildingdepartment@rvcap.ny.us	518-605-2184	February 2019	board meeting	yes
Fiscal/Budget Officer	Padraic Ellis, Treasurer	votreasurer@nycap.ny.us	518-732-2211 ext 3	January 2019	email	yes
Manager/Administrator	Robert Schmidt, Mayor	hpanalyst@aol.com	518-764-0802	self	self	yes
Elected Officials	Jen Pratico	jefinerp@yahoo.com	518-330-0518	February 2019	board meeting	yes
Local Hospital	n/a	n/a	n/a	n/a	n/a	n/a
Nursing Home	Renee Groesbeck, Riverside Rehabilitation Center	rgroesbeck@riversidecenterrehab.com	518-732-7617	August 2019	email	tb d
Major University	n/a	n/a	n/a	n/a	n/a	n/a
Significant Business	n/a	n/a	n/a	n/a	n/a	n/a
Neighboring County 1	David van Luvan, Supervisor of Town of Bethlehem	dvanluven@townofbethlehem.org	518-439-4955	August 2019	phone call	tb d
Neighboring County 2	n/a	n/a	n/a	n/a	n/a	n/a
Neighboring County 3	n/a	n/a	n/a	n/a	n/a	n/a
Neighboring County 4	n/a	n/a	n/a	n/a	n/a	n/a
Tribal Group/Nation	n/a	n/a	n/a	n/a	n/a	n/a

8.4.2 JURISDICTIONAL PROFILE

8.4.2.1 Location and Land Area

The Village of Castleton-on-Hudson is located in southwest Rensselaer County, in the eastern part of New York State. It is located within the Town of Schodack and shares a border with Albany County to the west.

According to the 2010 U.S. Census Bureau, Rensselaer County has a total area of 665 square miles (1,720 km²), of which 652 square miles (1,690 km²) is land and 13 square miles (34 km²) (1.9%) is water. Of that, the Village of Castleton-on-Hudson has a total area of 0.8 square miles (2.1 km²), all of it land.

8.4.2.2 Population

According to the 2010 U.S. Census Bureau's American Community Survey 5-Year Estimates, the population of the Village of Castleton-on-Hudson is estimated to be 1,473 persons.

8.4.2.3 Demographics

Of a total area of 0.80 (2010 Census data), the land area is 0.80 square miles and population per square mile is 2025.5 persons.

Of the total population, there are 88.4 males per 100 females (all ages). Persons under 18 years represent 23.0% of the population, and 15.2% are persons 65 years and over (2010 Census). Young and old subsets of the population may have unique needs as far as care requirements and potential cognitive and/or mobility limitations before, during, and after a disaster.

The number of persons who speak a language other than English is 53, or 4.1%, of which 28.3% speak English less than "very well". Persons not speaking English well may have trouble understanding instructions regarding disaster preparation, response, and recovery.

Regarding education, of persons age 25 years and older, 82.4% are high school graduates or higher, and 25.6% have received their bachelor's degree or higher (2000 Census data). Higher education can help enhance skills associated with cognition and evaluation of risk. Higher education can, therefore, foster an overall improved perception of risk, particularly where individuals may not have prior direct experience preparing for, responding to, or recovering from a particular hazard in their daily lives.

Regarding families and living arrangements, from 2013 to 2017 there were 566 total households and 2.43 persons per household. Persons living alone sometimes have less of a direct social circle for support before, during, and after a disaster.

The Census Bureau classifies all people not living in housing units (house, apartment, mobile home, rented rooms) as living in group quarters. The two types of group quarters are Institutional (correctional facilities, nursing homes, mental hospitals) and Non-Institutional (college dormitories, military barracks, group homes, missions, shelters). The total number in group quarters are 96 or 6.5% overall, with 75 (5.1%) institutionalized and 21 (1.4%) noninstitutionalized population. The needs of persons living in group quarters are unique, and residents are likely to have access and functional needs and unique care requirements before, during, and after a disaster.

According to 2017 ACS, the median household income was \$71,667; the per capita income in past 12 months (2017) was \$32,835; and the percentage of persons in poverty was 6.8%. Lower income persons have limited financial resources to draw from in both a pre- and post-disaster scenario and are likely to require support as they prepare for, and recover from, hazard events.

The total of noninstitutionalized civilians with a disability is 11.2%, and the percentage of people with a disability over age 65 years is 21.2%. The total percentage of persons (civilian, noninstitutionalized) without health insurance is 2.4%. Persons with disabilities have access and functional needs such as cognitive or mobility limitations that may put them at greater risk before, during, and after a hazard event.

8.4.2.4 Brief History

The area that is now Rensselaer County was inhabited by the Algonquian-speaking Mohican Indian tribe at the time of European encounter. Kiliaen van Rensselaer, a Dutch jeweler and merchant, purchased the area in 1630, as part of the Dutch colony New Netherland. The land passed from English rule (1664) to Dutch control (1673), then back to English rule (1674), until American independence in 1776. Rensselaer County was created in 1790s from an area that was originally part of the very large Albany County. In 1807 the county reorganized.

The first inhabitants to live in the Castleton-on-Hudson area were the Mohican Indians. The old tradition of a Mohican village or "castle" on the hill gave Castleton-on-Hudson the first part of its name. In the 1600's, the area became part of Rensselaerswyck, a colony owned by the Van Rensselaer, who bought land from the Mohicans. New Netherland became New York in 1664, but the area retained its Dutch flavor as the site of future Castleton-on-Hudson was occupied by settlers under Van Rensselaer leases. The incorporation of the village in 1827 signaled that a group of entrepreneurs were expecting Castleton-on-Hudson to grow. In 1856 Charles Benthuisen came to Castleton-on-Hudson and started a paper mill on the grounds of what later became the Fort Orange Paper Company, which in years to come would be the mainstay of the economy of the village.

8.4.2.5 Governing Body Format

The governing body of the municipality consists of a Mayor, Deputy Mayor, and Board of Trustees. This council serves as the municipal/local government, performing executive functions of different natures. Members of this governing body are elected by the people.

8.4.2.6 Growth/Development Trends

Performing an assessment of growth and development trends is one step of a hazard mitigation plan update. This look into the future is important because development in hazard areas could put more people and property in harm's way and, in turn, could work to increase potential disaster-related damages and losses at a time when the mitigation plan's purpose is to reduce the potential for damages emanating from natural disasters.

An evaluation of growth and development trends was undertaken by each participating jurisdiction as part of the development of the initial plan in 2011. As part of this plan update, the Village of Castleton-on-Hudson reviewed and updated its prior feedback to reflect current conditions in the community as of early 2019.

The Village of Castleton-on-Hudson did not note major residential or commercial development taking place, or any major infrastructure development planned for the next 5 years in the municipality. A six-home subdivision is planned; this is fairly major development given the Village’s small size and limited availability of land for new development. The Village does not have a large amount of undeveloped land available for construction. Significant work is being done to remedy a wetland area that experiences flooding and drainage issues. Overall, there has been minimal land development in the Village since 2011.

New Development/Potential Development in the Municipality						
Property Name	Type (Residential or Commercial)	No. of Structures	Address	Block and Lot	Known Hazard Zone	Description /Status
Orchard Property	Residential	6	Scott Avenue	198.16-4-5.3	Wetlands, Flooding	6 lot subdivision, pending

The Village enforces regulations, ordinances and codes to minimize effects of natural hazards. The Village has in place critical environmental zoning regulations to protect against slumping, sliding and erosion. The critical overlay area has been designated in Rensselaer County soil and water conservation Map as type HUE (250e) soils (at least a 25% grade). The Village also has flood Hazard Zoning regulations as described by the Flood Hazard Boundary Map issued by the Federal Emergency Management Agency. The Village of Castleton-on-Hudson enforces Chapter 123- Flood Damage Prevention to protect new development from the effects of natural hazards.

8.4.3 HAZARD IDENTIFICATION

The following hazards represent those that were deemed to be significant hazards of concern for the Village of Castleton-on-Hudson:

Profiled Hazard in the Village of Castleton-on-Hudson													
Jurisdiction	Atmospheric Hazards						Hydrologic Hazards			Geologic Hazards		Other Hazards	
	Extreme Temperatures (Coldwave/Heat Wave)	Hurricane / Tropical Storm	Lightning	Tornado	Wind	Winter Storm	Drought	Flood			Earthquake	Landslide ⁴	Wildfire ⁵
								Flooding ²	Dam Failure ¹	Ice Jam ³			
Castleton-on-Hudson, Village of	■	■	■	■	■	■	■	■		■	■	■	■

Notes: (1) Based on presence of a High hazard dam (NYSDEC classification) either in the municipality or close upstream on a watercourse flowing through that municipality and feedback from the County Planning Department. (2) Based on identification of improved property in mapped FEMA flood hazard zones. (3) Based on historical records, Flood Insurance Studies, and local information as well as feedback from the County Planning Department. (4) Based on identification of improved property in mapped high incidence or high susceptibility landslide risk zones, plus those municipalities in which details of individual landslide events are available. (5) Based on identification of improved property in mapped wildfire hazard zones.

8.4.4 NOTABLE HAZARD EVENT OCCURRENCES SINCE 2011

Rensselaer County has a long history of natural hazard events occurring, as detailed in Section 3 of this plan. A summary of historical events is provided in each of the hazard profiles of Section 3 and includes a chronology of events that have affected the County and its municipalities.

NOAA's NCDC records 1,141 hazard event occurrences from 1950 to 2018 causing 1 fatality, 116 injuries, \$27,679,000 in property damage, and \$305,800 in crop damage. The table below presents a summary of 415 events that are included in NOAA's NCDC records for Rensselaer County since the prior 2011 HMP was prepared to summarize the recent range and impact of natural hazard events potentially affecting the County and its municipalities. For details of events prior to 2011, refer to Section 3 of this plan.

Natural Hazard Event History (January 2011 through December 2018)					
Event Type	Count	Fatalities	Injuries	Property Damage	Crop Damage
Blizzard	2	0	0	\$0	\$0
Cold/Wind Chill	28	0	0	\$0	\$0
Excessive Heat	3	0	0	\$0	\$0
Extreme Cold/Wind Chill	8	0	0	\$0	\$0
Flash Flood	20	0	0	\$320,000	\$0
Flood	16	0	0	\$10,000	\$0
Frost/Freeze	6	0	0	\$0	\$0
Hail	29	0	0	\$0	\$0
Heat	17	0	0	\$0	\$0
Heavy Rain	1	0	0	\$0	\$0
Heavy Snow	13	0	0	\$0	\$0
High Wind	17	0	0	\$0	\$0
Lightning	1	0	0	\$50,000	\$0
Storm Surge/Tide	1	0	0	\$0	\$0
Strong Wind	22	0	0	\$48,000	\$4,000
Thunderstorm Wind	141	0	7	\$0	\$0
Tropical Storm	2	0	0	\$0	\$0
Winter Storm	28	0	0	\$0	\$0
Winter Weather	60	0	0	\$0	\$0
Total	415	0	7	\$428,000	\$4,000

Since 1954, Rensselaer County has been designated as eligible for at least one form of FEMA assistance in 16 Federally-declared major disasters and eight Federally-declared emergencies. Since the adoption of the 2011 HMP, Rensselaer County has been designated as eligible for at least one form of FEMA assistance in three of the state's 12 Federally-declared major disasters (2011 through 2018).

Rensselaer County Disaster Declarations, 2011-2018					
Declaration Year	Event Incident Period	Declaration Type	Disaster Type	Disaster Number	Rensselaer County Designation
2017	March 14-15, 2017	Major Disaster Declaration	Severe Winter Storm and Snowstorm	DR-4322	Declared for PA only
2011	September 7-11, 2011	Emergency Declaration	Tropical Storm Lee	EM-3341	Declared for PA Category B
2011	August 26, 2011 through September 5, 2011	Major Disaster Declaration	Hurricane Irene	DR-4020	Declared for PA and IA

Rensselaer County Disaster Declarations, 2011-2018					
Declaration Year	Event Incident Period	Declaration Type	Disaster Type	Disaster Number	Rensselaer County Designation
2011	December 26-27, 2010	Major Disaster Declaration	Severe Winter Storm and Snowstorm	DR-1957	Declared for PA Category B

Source: FEMA, online at <https://www.fema.gov/disasters>, queried on July 11, 2019
 PA= FEMA's Public Assistance Program
 IA= FEMA's Individual Assistance Program
 Category B= FEMA's Public Assistance Program Category B (Emergency Protective Measures)

Some more recent notable events in the Village of Castleton-on-Hudson since 2011 include:

February 25-26, 2010

The NYSHMP 2019 indicates that a mudslide was reported off Main Street in Castleton-on-Hudson on February 25, 2010, affecting access to a home. The mudslide was the result of heavy rainfall and snowmelt. On February 26, 2010, a landslide occurred behind the Castleton Volunteer Fire Department forcing the evacuation of the firehouse and its equipment and burying a basketball court located behind the firehouse on Green Street. Heavy rains weakened the hillside and for a time it was feared that there were signs that a more severe landslide was on its way. The firehouse and its equipment were evacuated. At a subsequent meeting between the Village and the Rensselaer County Soil and Water Conservation Service (RCSWCS) the Village indicates that they were advised by RCSWCS that the best approach for moving forward would be to allow the material to remain intact at the base of the slope, and fence in the area. Local regulations exist in the Village to protect against slumping, sliding, and erosion regarding activities that can be taken on slopes of greater than 25% where HUE (250e) soils are present. More formal mitigation activities for this particular site were not recommended.

August 28, 2011 – Irene

The remnants of Hurricane Irene brought heavy to extreme rainfall and severe winds throughout Rensselaer County. In Castleton-on-Hudson, Route 150 at Route 9J was closed, and Route 9J was closed due to flooding between Knickerbocker Road and Brickyard Road.

September 7, 2011 – Lee

Flooding was reported on Route 9J south of Route 150 in Castleton-on-Hudson.

October 29-30, 2012 – Sandy

Wind gusts of 40 to 60 mph were common from the afternoon of the 29th until the early morning hours of the 30th. Rainfall in Rensselaer County was not excessively heavy and did not cause notable flooding, thanks to dry antecedent conditions. Tidal flooding did occur along the Hudson River, causing damage to homes and businesses located near the river including Brickyard Road in Castleton-on-Hudson.

June 30, 2013 – Thunderstorm Wind

Trees were downed due to thunderstorm winds in Castleton-on-Hudson. The trees damaged boat docks at a local boat club on the Hudson River.

July 19, 2015

As a result of thunderstorm heavy rainfall, flash flooding occurred along Route 9J in Castleton. A car was stuck in the roadway due to flood waters.

June 30, 2017 to July 1, 2017 - Severe Storms and Flooding

Numerous strong to severe thunderstorms occurred across Rensselaer County. Thunderstorm winds caused damages throughout the county, downing trees and power lines, and heavy rains caused flooding in many areas of the county.

August 3, 2018 – Thunderstorm Wind

Thunderstorms brought heavy rain and strong winds to the area. Large tree limbs and wires were reported down in the Village of Castleton-on-Hudson.

8.4.5 NATIONAL FLOOD INSURANCE PROGRAM SUMMARY

The Village of Castleton-on-Hudson has participated in FEMA's National Flood Insurance program (NFIP) since November 15, 1984.

• Total number of policies ¹ :	16
• Insurance in force ² :	\$2,299,100
• Total number of losses:	18
• Total claims paid:	\$45,111
• Repetitive Loss Properties:	0
• Severe Repetitive Loss Properties:	0

The Village of Castleton-on-Hudson provided the following NFIP Administrator Input in 2019, for inclusion in the 2019 HMP.

¹ Policies in Force from www.fema.gov on 02/21/19, data current as of 09/30/18.

² Insurance in Force from www.fema.gov on 02/21/19, data current as of 09/30/18.

Name: Robert Schmidt Title: Floodplain Manager/Floodplain Administrator/NFIP Coordinator
 Community: Village of Castleton-on-Hudson Email and Phone: hpanalyst@aol.com (518) 732-2211



Worksheet 2 - NFIP

Note: This form should be filled out by your floodplain administrator. Submittals should be returned via email to Jay Wilson at jwilson@renesco.com. Feel free to contact Anna Foley of AECOM if you have questions, at anna.foley@aecom.com. All communities participating in the National Flood Insurance Program (NFIP) provided FEMA with a floodplain management ordinance and a designated floodplain administrator as a prerequisite to enter the program. All participating communities must provide the information below. Please return a copy of your floodplain management ordinance to us with this submittal.

Adoption Date of your Current Floodplain Management Ordinance	Date of Entry into NFIP ¹	Position or Title of Your Jurisdiction's Designated Floodplain Manager/Administrator (may also be called NFIP Coordinator)		Is this person a Certified Floodplain Manager?	Is floodplain management an auxiliary function?	Is your community in good standing with the NFIP?	
8/24/87	11/15/84	Building Inspector		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Provide an explanation of NFIP administration services (i.e., permit review, GIS, education or outreach, inspections, engineering capability, etc.):							
Inspections and Permit Review							
Describe barriers to running an effective NFIP program in the community (if applicable):							
Proximity to the river, construction restrictions and cost in floodplain areas							
When was most recent FEMA Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?*	Is a CAV or CAC scheduled or needed?	Does the current floodplain management ordinance exceed FEMA or State minimum requirements? If so, describe how.	Is training of staff regarding NFIP issues planned?	Does your community intend to continue to enforce the floodplain management requirements including regulating new construction in Special Flood Hazard Areas (SFHAs)?	Does your community participate in the CRS? If so, state your Class.	Does your community intend to continue its participation in the CRS program?	If your community is not currently participating in the CRS program, are you intending to initiate the process during the next planning cycle?
2011	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes* <input checked="" type="checkbox"/> No* * Class _____	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
* Describe any outstanding compliance issues (i.e., current violations):							

¹ Your date of entry into the NFIP can be found at: <http://www.fema.gov/cis/NY.html> (column "Reg-Emer Date").

Rensselaer County Multi-Jurisdictional Hazard Mitigation Plan Update – NFIP Worksheet NFIP-1

Name: Robert Schmidt Title: Floodplain Manager/Floodplain Administrator/NFIP Coordinator
 Representing: Village of Castleton-on-Hudson Email and Phone: hpanalyst@aol.com (518) 732-2211



Provide an explanation of your local floodplain permitting process:

Building Inspector notifies property owner before any permit is issued in floodplain, Planning Board does floodplain review

Does your community intend to continue floodplain identification and mapping services including any local requests for map updates?	Does your community intend to initiate/continue the buyouts/continue the buyouts of repetitive loss properties?	Does your community intend to commit staff or resources to improve local mapping or code administration in the future?	Does your community intend to provide local outreach to promote the sale of flood insurance?	Does your community intend to participate in RiskMAP meetings and planning initiatives?	Does your community intend to continue to implement structural improvements to mitigate against flooding - culverts, drainage basins, etc.?	Does your community intend to implement home improvement programs designed to minimize basement flooding?	Does your community intend to continue to implement roadway improvements to reduce damage from future flooding events?	Does your community intend to implement plans and programs in coordination with a local or regional drainage/sewer authority?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Does your community intend to adopt the new FEMA Advisory Base Flood Elevation?	As Floodplain Manager, did you (or your predecessor at the time) actively participate in the development of the initial Hazard Mitigation Plan?	As Floodplain Manager, are you actively participating in the development of this Hazard Mitigation Plan Update?	Have there been any changes to your community's local floodplain management program since the last version of the plan in 2011?					
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes* <input checked="" type="checkbox"/> No					
* If you answered "yes", that there have been changes to your local program since 2009, please describe:								
Provide a description of your community assistance and monitoring activities:								
Planning Board Review, MS4 monitoring, floodplain maps available to the public								
NFIP participating communities are required to update/revise their floodplain management ordinance to ensure that it complies with the latest FEMA regulations. Will your community continue to commit to this program requirement?				NFIP participating communities are also required to update/revise their floodplain management ordinance to be consistent with the latest FIRMS. Will your community continue to commit to this program requirement?				
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				

Note: NFIP policy statistics by community are maintained at: <http://bva.nfipstat.fema.gov/reports/1011.htm#NJT>
 NFIP claims data by community is maintained at: <http://bva.nfipstat.fema.gov/reports/1040.htm#34>
 Information about structures at risk of flooding can be found in the current Hazard Mitigation Plan.
 All NFIP participating communities should encourage local residents to purchase and maintain flood insurance.

Rensselaer County Multi-Jurisdictional Hazard Mitigation Plan Update – NFIP Worksheet NFIP-2

8.4.6 ASSET IDENTIFICATION AND CHARACTERIZATION

An inventory of geo-referenced assets in Rensselaer County has been created in order to identify and characterize property and persons potentially exposed to the identified hazards. Section 3b of the plan presents the asset identification and characterization process in great detail. The following table presents an overview of assets in Rensselaer County³ and the subset of those assets that fall within the Village of Castleton-on-Hudson.

³ The County totals are included here for readers to understand the proportion of countywide assets that lie within this municipality.

Asset Inventory																			
Jurisdiction	Improved Property (RCV ⁴)	Emergency Facilities					Critical Infrastructure and Utilities										Other Key Facilities		Historic and Cultural Resources
		Fire Stations	Police Stations	EMS / Ambulance Stations	Hospitals	Shelters ⁵	Wastewater Facilities	Water Treatment Facilities	Airports	Railroads (Passenger/ Freight Station)	Electric Power Facilities	Communications Facilities	Oil Facilities	Hazardous Materials Sites	Natural Gas Facilities	Ports	Schools	Residential Senior Care Facilities ⁶	
Rensselaer County	\$33,333,947,000	44	9	19	2	33	8	1	0	13	1	6	5	60	1	12	64	3	84
Village of Castleton-on-Hudson	\$271,600,000	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0
Rensselaer County	Population, Census 2010:	159,429																	
Village of Castleton-on-Hudson	Population, Census 2010:	1,473																	
Rensselaer County	Vulnerable Population, Census 2010 (under 5 years, and over 64 years)	30,429																	
Village of Castleton-on-Hudson	Vulnerable Population, Census 2010 (under 5 years, and over 64 years)	326																	

⁴ Replacement Cost Value

⁵ Specific shelter data is protected information and is not released to the public unless and until necessary during a disaster.

⁶ * As per the County Department of Economic Development and Planning, these figures only encompass the senior centers which are not residential facilities.

Exposure – Assets in the Floodplain

Land. Approximately 26 percent of the Village’s land area is located in the 100-year floodplain.

Land in the 100-year Floodplain			
Municipality	Land Area of Municipality (Acres)	Land in the 100-year Floodplain (Acres)	Percent of Land in the 100-Year Floodplain (%)
Castleton-on-Hudson, Village of	531	139	26%

Improved Property. Approximately 24 percent of the Village’s improved property is located in the 100-year floodplain.

Improved Property in the 100-year Floodplain			
Municipality	Replacement Cost Value (RCV) Structure and Contents (\$)	RCV in the 100-year Floodplain (\$)	Percent of RCV in the 100-Year Floodplain (%)
Castleton-on-Hudson, Village of	\$271,600,000	\$66,023,202	24%

Population. Approximately 12 percent of the Village’s population resides in the 100-year floodplain.

Population in the 100-Year Floodplain			
Municipality	Total Population (Census 2010)	Estimated Population in the 100 year Floodplain	Percent of Population in the 100-year Floodplain
Castleton-on-Hudson, Village of	1,473	181	12%

Critical Facilities. The following critical facility (emergency facilities, critical infrastructure and utilities, and other key facilities, as presented in Section 3b) is located in the floodplain in the Village of Castleton-on-Hudson.

Critical Facilities in the Floodplain			
Municipality	Type of Facility	Name of Facility	Flood Zone ⁷
Castleton-on-Hudson, Village of	FREIGHT STATION	CSXT	A/AE/AO

Historic and Cultural Resources. No listed historic and cultural resources are located in the floodplain in the Village of Castleton-on-Hudson.

⁷ 100-year floodplain = A/AE/AO; 500-year floodplain = X500

8.4.7 POTENTIAL FUTURE DAMAGES

Estimated annual losses provided in this section are based on best available data, and the methodologies applied result in an approximation of risk. Loss estimates should be used to understand relative risk from hazards.

Uncertainties are inherent in any loss estimation methodology, arising in part from incomplete scientific knowledge concerning natural hazards and their effects on the built environment. Uncertainties also result from approximations and simplifications that are necessary for a comprehensive analysis (i.e., incomplete inventories, demographics or economic parameters

The following table provides estimated average annual losses from HAZUS-MH 4.0 runs, where available. For hazards for which HAZUS modules are not available, historic damages have been distributed across municipalities based on their proportion of improved property. It is important to note that this table reflects estimates of average annual damages. For any hazard, individual event damages could be substantially (orders of magnitude) higher.

For the Village of Castleton-on-Hudson, the hazard with the highest estimated average annual losses is flooding.

Summary of Annual Loss Estimates – Village of Castleton-on-Hudson ⁸													
Municipality	Replacement Cost Value of Improvements (\$)	Extreme Temperatures	Hurricane/ Tropical Storm - Wind	Hurricane/ Tropical Storm – Wind + Flood	Lightning	Tornado	Wind	Winter Storm (Ice Storm/ Snow Storm)	Drought	Flood	Earthquake	Landslide	Wildfire
		NOAA NCEI, 1996-2018	HAZUS	NOAA NCEI, 1996-2018	NOAA NCEI, 1996-2018	NOAA NCEI, 1996-2018	NOAA NCEI, 1996-2018	NOAA NCEI, 1996-2018	NOAA NCEI, 1996-2018	NOAA NCEI, 1996-2018	HAZUS	HAZUS	NOAA NCEI, 1996-2018
Village of Castleton-on-Hudson	\$271,600,000	\$11	\$116	\$704	\$87	\$3,861	\$978	\$274	\$0	\$31,910	\$797	\$0	\$1

⁸ * **It is important to note that this table reflects estimates of average annualized damages. For any hazard, individual event damages could be substantially higher.**

8.4.8 HAZARD RANKINGS AND KEY RISK FINDINGS

Hazard rankings for the Village of Castleton-on-Hudson are provided in the table below. Hazard priorities are based on each hazard’s likelihood of occurrence, potential consequences, relative risk and average annualized losses. Rows are shaded red for High Hazard Priority; yellow for Moderate Hazard Priority; and green for Low Hazard Priority.

Flooding is the highest priority hazard for the Village of Castleton-on-Hudson.

Hazard Rankings – Village of Castleton-on-Hudson					
Hazard	Future Probability	Potential Consequence	Relative Risk	Hazard Priority	Average Annualized Losses ⁹
Extreme Temperatures (Coldwave/ Heat Wave)	Low	Low	Low	Low	\$11
Hurricane/ Tropical Storm	Low	High	Moderate	Moderate	\$116 Wind; \$704 Wind + Flood
Lightning	High	Low	Low	Low	\$87
Tornado	Low	High	High	High	\$3,861
Wind	High	Low	High	High	\$978
Winter Storm (Ice Storm/Snow Storm)	High	Moderate	Moderate	Moderate	\$274
Drought	Low	High	Low	Low	\$0
Flood	High	High	High	High	\$31,910
Earthquake	Low	High	Moderate	Moderate	\$797
Landslide	High	Low	Moderate	Moderate	\$0
Wildfire	Low	Low	Low	Low	\$1

Key risk findings identified by the Village of Castleton-on-Hudson JAT as representing the highest local priorities for mitigation are:

- The pipes in the area of Green Avenue are undersized. In addition, their age and subsequent deterioration is causing water to leach out of the pipes and in turn, instability and sliding along the slope. Roadway flooding occurs during severe storms, and there are issues with slope stability. The fire house is in the area where roadway flooding occurs. The Village has limited funding, and continued patchwork repairs are not considered a fiscally responsible approach.
- Similar to Green Avenue, the pipes in the area of Seaman Avenue are undersized. In addition, their age and subsequent deterioration is causing water to leach out of the pipes and in turn, instability and sliding along the slope. Roadway flooding occurs during severe storms, and there are issues with slope stability. The Village has limited funding, and continued patchwork repairs are not considered a fiscally responsible approach.

⁹ Source: NOAA NCEI, except as noted. \$0 in average annualized losses had no damages recorded for events between 1996 and 2018. Actual annual damages are unquantifiable but higher.

- A company has expressed interest in purchasing the Old Fort Orange Property, which has been abandoned since 2000. The site has been used for industrial purposes since 1858. The party considering purchase of the property would be performing environmental cleanup, demolition of the existing building, and construction of a new building (industrial facility). The Village is of the understanding that the new plant may require pumping on the order of about 1 million gallons of water from the Moordener Kill. The sewer system on the site may need to be replaced, repairs, and/or extended. The Village does not have a complete understanding of the level of possible contamination from the site's prior use by the paper company, or any environmental impacts that may occur as a result of drawing so much water from the creek, or the sewer requirements. The Village would like to hire a firm to conduct a study to evaluate the long term impact of future industrial zoned development at this site and engage a hazard mitigation evaluation by an external engineering firm regarding flooding and steep slopes.
- Trees in the Village are damaged during ice storms and severe wind events. Sometimes leading to localized power outages, structure damages, and roadway closures.
- Uneducated public. Residents could benefit from additional information on hazards, risks, and hazard mitigation measures they can take on their own properties to reduce damages and improve resident safety before, during and after a hazard event.
- The Village's hazard mitigation plan is not integrated into the existing comprehensive plan. A long term vision for the community that doesn't take into account hazard areas can put lives and property at risk. Taking into account natural hazards and hazard mitigation measures can make the community more resilient.
- The Village has an outdated floodplain management ordinance.

Mitigation projects to address these key risks are included as part of the Village's overall hazard mitigation strategy.

8.4.9 OUTREACH TO THE PUBLIC AND OTHER STAKEHOLDERS

As part of this 2019 Plan Update, the Village of Castleton-on-Hudson undertook various activities to: (a) alert the public and other stakeholders to the fact that the HMP Planning Committee was working to develop the update; and (b) provide the public and other stakeholders with a forum to ask questions and submit comments and suggestions on the process. Outreach activities undertaken by the Village included:

Outreach Activities			
Date of Activity	Type of Activity	Activity Details	Lead Department and/or Staff Title Who Undertook Activity
[2/11/19]	[Village Board meeting open to the public]	[Discussed the hazard mitigation plan, and voted to participate in the plan update]	[Mayor Robert Schmidt]
[August 2019]	[Mailing]	[Inserted the Fact Sheet into quarterly water bill]	[Padraic Ellis, Treasurer]
[August 12, 2019]	[Village Board meeting open to the public]	[Mitigation plan update discussed at a regularly scheduled board meeting]	[Mayor Robert Schmidt]
[August 2019]	[Social Media posting]	[Posted information about the plan update on the Village web site and Village Facebook page]	[Trustee Giuliano]

Outreach Activities			
Date of Activity	Type of Activity	Activity Details	Lead Department and/or Staff Title Who Undertook Activity
August 2019]	Fact Sheet on local notice boards]	Hard copy Fact Sheet was posted on the following local Village notice boards: 2 Green Avenue at the Noyes Engine House, Village Hall, Cherry Brook Diner, and Village Inn.]	Mayor Robert Schmidt]

The Village of Castleton-on-Hudson has received the following comments to date as a result of its outreach activities.

Comments Log								
Comment	Comment Submitted By	Comment Submitted To	Comment Submitted on Date	How was comment submitted?	Disposition (Concur; non-concur; will evaluate)	Response / Action Proposed	Responsible Party	Action taken
General comments from the public regarding new construction occurring in the Village on steep slopes. There has been a general worry expressed by the public to the Village at various times over the last few years. Rain can wash stones, soil, etc. onto roads including but not limited to Main Street.	Phone calls to Village offices from local residents	Mayor Schmidt	Multiple calls over the last several years	verbal - telephone calls	Concur	Village will look into the issue further and see what they can do. The Village does have a steep slope ordinance, which requires additional review by an engineer and the Village planning board.	Village DPW	Ongoing consideration

8.4.10 CAPABILITY ASSESSMENT

This section describes the following capabilities of the local jurisdiction:

- Legal and regulatory capability;
- Administrative and technical capability;
- Fiscal capability;

- Community resiliency;
- Community political capability; and
- Community classification.

8.4.10.1 Legal and Regulatory Capability

The table below summarizes the regulatory tools that are available to the Village of Castleton-on-Hudson. The Village reviewed its responses from the 2011 HMP and has updated its prior feedback to reflect present-day conditions.

Legal and Regulatory Capability			
Regulatory Tools (Codes, Ordinances, Plans)	Do you have this? (Y or N)	Enforcement Authority	Code Citation (Section, Paragraph, Page Number, Date of Adoption)
a. Building code	Y	Building Inspector	Chapter 101, 3/7/16
b. Zoning ordinance	Y	Zoning & Planning Boards	Chapter 210, 3/26/84
c. Subdivision ordinance or regulations	Y	Planning Board	Chapter 174 Article III, 5/9/16
d. Special purpose ordinances (floodplain management, stormwater management, hillside or steep slope ordinances, wildfire ordinances, hazard setback requirements)	Y	Building Inspector, MS4 Coordinator	Chapter 174 Attachment II, 11/1/17
e. Growth management ordinances (also called "smart growth" or anti-sprawl programs)	N	N/A	Majority of land in the Village has been developed
f. Site plan review requirements	Y	Planning Board	Chapter 210-57, 3/26/84
g. General, comprehensive or master plan	Y	Village Board	Not included in code
h. A capital improvements plan	N	Village Board	Pending
i. An economic development plan	N	Village Board	Pending
j. An emergency response plan	Y	Village Board	Chapter 22 Attachment 1- Appendix D, 11/1/17
k. A post-disaster recovery plan	N	Village Board	
l. A post-disaster recovery ordinance	N	Village Board	
m. Real estate disclosure requirements	Y	Rensselaer County	
n. Other			

8.4.10.2 Administrative and Technical Capability

The table below summarizes potential staff and personnel resources available to the Village of Castleton-on-Hudson. The Village reviewed its responses from the 2011 HMP and has updated its prior feedback to reflect present-day conditions.

Administrative and Technical Capability		
Staff / Personnel Resources	Available (Y or N)	Department / Agency / Position
a. Planner(s) or engineer(s) with knowledge of land development and land management practices		Hired as needed
b. Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure		Hired as needed
c. Planners or Engineer(s) with an understanding of natural and/or human-caused hazards		Hired as needed
d. Floodplain manager	Yes*	Building Inspector
e. Surveyors		Hired as needed
f. Staff with education or expertise to assess the community's vulnerability to hazards		Pending
g. Personnel skilled in GIS and/or HAZUS	No	
h. Scientists familiar with the hazards of the community		Hired as needed
i. Emergency manager	Yes	Mayor
j. Grant writers	Yes	Trustee/Hired as needed
k. Staff with expertise or training in benefit/cost analysis	Yes	Clerk-Treasurer
*All communities participate in the National Flood Insurance Program; as such, they are required by the regulations to have an appointed floodplain manager.		

8.4.10.3 Fiscal Capability

The table below summarizes financial resources available to the Village of Castleton-on-Hudson. The Village reviewed its responses from the 2011 HMP and has updated its prior feedback to reflect present-day conditions.

Fiscal Capability	
Financial Resources	Accessible or Eligible to use (Yes/No/Don't know)
a. Community Development Block Grants (CDBG)	Yes
b. Capital improvements project funding	Yes
c. Authority to levy taxes for specific purposes	Yes
d. Fees for water, sewer, gas, or electric service	Yes
e. Impact fees for homebuyers or developers for new developments/homes	Yes
f. Incur debt through general obligation bonds	Yes
g. Incur debt through special tax and revenue bonds	No
h. Incur debt through private activity bonds	No
i. Withhold spending in hazard-prone areas	No
j. State mitigation grant programs	No
k. Community Development Block Grants (CDBG)	Yes
j. Other	

8.4.10.4 Overall Capabilities

The Village of Castleton-on-Hudson's 2019 assessment of its overall capabilities to implement hazard mitigation strategies in each of the above categories, in addition to their local assessment of how these capabilities could be expanded and/or improved to reduce risk, is presented in the table below.

Overall Capabilities				
Overall legal and regulatory capability to implement hazard mitigation strategies	Overall technical capability to implement hazard mitigation strategies	Overall fiscal capability to implement hazard mitigation strategies	Overall administrative capability to implement hazard mitigation strategies	Community's willingness to enact policies and programs that reduce hazard vulnerabilities
High	Moderate	Moderate	High	Moderate
How these capabilities can be expanded and/or improved to reduce risk:				
Continued support for Hazard Mitigation Plan, Funding for engineered projects				

8.4.10.5 Community Classifications

The table below summarizes classifications for community program available to the Village of Castleton-on-Hudson.

Community Classifications		
Program	Classification	Date Classified
Community Rating System (CRS) *	NP	
Building Code Effectiveness Grading Schedule (BCEGS)	NP	
Public Protection	NP	
Storm Ready	NP	
FireWise	NP	

Notes:

- = Unavailable

N/A = Not applicable

NP = Not participating.

* CRS Ranking as of April 2019

The classifications listed above relate to the Village of Castleton-on-Hudson's ability to provide effective services to lessen its vulnerability to the natural 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 1,000 feet of a creditable fire hydrant and is within five 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 <http://www.isomitigation.com/ppc/0000/ppc0001.html>
- The National Weather Service Storm Ready website at <http://www.weather.gov/stormready/howto.htm>
- The National FireWise Communities website at <http://firewise.org/>

8.4.11 PLAN FOR DISPLACED RESIDENTS

New York State requires that intermediate and long-term housing options must be available for relocating displaced residents to maintain post-disaster social and economic stability. Intermediate and long-term housing options for displaced residents were evaluated as part of the 2019 HMP Update. Additional information can be found in Appendix C.

8.4.12 PLAN FOR EVACUATION NEEDS AND SHELTERING

The Village of Castleton-on-Hudson has an emergency response plan¹⁰. It does not have a post-disaster recovery plan or a post-disaster recovery ordinance¹¹. Rensselaer County has an existing Comprehensive Emergency Management Plan (CEMP) documenting the County's plan for evacuation and sheltering measures during hazard events. The Plan is posted online at: <http://www.rensco.com/wp-content/uploads/2019/07/Rensselaer-County-CEMP.pdf>. As part of this hazard mitigation plan update, the Rensselaer County reviewed their existing CEMP and determined that updates were necessary at this time. Updates to the CEMP are being completed at this time. Once finalized and approved, the County will post the updated CEMP at the same address and will follow procedures in its updated CEMP in all future disasters. The County BPS indicated that there are no designated evacuation routes.

Appendix B contains updated shelter data provided by the Red Cross in 2018. Shelter locations are not made public until facilities are actually opened for an event and therefore, pages of Appendix B that include shelter information are nonpublic. Since every possible shelter is not opened during every event, the data is not made public in order to ensure that individuals in need of shelter do not seek it at facilities which may remain closed during a particular event. The Village of Castleton-on-Hudson has access to shelter data and will coordinate with the Red Cross as part of their standard operating procedures if and when a need is identified for local shelters to be opened in the community.

¹⁰ Source: Local Capability Assessment

¹¹ Source: Local Capability Assessment

8.4.13 FUTURE NEEDS - RISK/VULNERABILITY

The Village of Castleton-on-Hudson has identified no future needs to better understand risk/vulnerability in the community.

8.4.14 PLAN INTEGRATION

For a community to succeed in reducing risk in the long term, the information and recommendations of the hazard mitigation plan must be integrated into day-to-day local government operations. Throughout the planning process, partnerships are formed between departments and agencies, and sustained actions between these partners will increase the community's resilience to disasters. "Plan integration" can be thought of as the process whereby a local government incorporates the mitigation plan findings and projects into other planning mechanisms (governance structures that are used to manage local land use development and community decision making).

It is the intention of the Village of Castleton-on-Hudson to incorporate mitigation planning as an integral component of daily municipal operations. The balance of this subsection describes local accomplishments over the last planning cycle (2011-2019), and targeted activities for the next planning cycle (2019-2024).

Demonstration of Progress over the Last Planning Cycle (2011-2019) – The Village of Castleton-on-Hudson undertook the following plan integration mechanisms over the last planning cycle:

- Issued a letter to each community department head to solicit their support and explore opportunities for integrating hazard mitigation planning objectives into daily activities.
- Worked with the Planning Department to educate them on the Hazard Mitigation Plan and encourage that on the next update of the master plan, general or comprehensive plan, hazard mitigation for natural hazards is addressed.
- Coordinated with the building department (via meeting with the code enforcement officer) to ensure that they have adopted and are enforcing the minimum standards established in the current State-adopted IBC.
- Community currently has a local zoning ordinance.
- Worked with the local zoning board to educate them on the Hazard Mitigation Plan and encourage consideration of low occupancy, low-density zoning in hazard areas, when practicable.
- Modified the local comprehensive plan to add a hazard element. (Plan currently under review, hazard element will be added)
- Worked with the Department of Public Works to adopt more rigorous procedures for inspecting and cleaning debris from streams and ditches (i.e., more frequently).
- Worked with Planning Department has added hazard vulnerability to subdivision and site plan review criteria.
- Reached out to partner groups in the community (i.e., nonprofit organizations, businesses, etc.) to identify those who may be willing to donate goods or services and create a database of contact information and indicated goods/services.
- Actively sought citizen volunteers to help implement mitigation programs and activities.

- Worked with local library staff members to discuss the mitigation plan so they are well-versed in its purpose and understand where to direct interested parties for more information, to provide feedback, or to become involved.

Targeted Plan Integration Activities for the Next Planning Cycle (2019-2024) – The Village of Castleton-on-Hudson plans to implement the following plan integration mechanisms into local government operations from this point forward through the next planning cycle:

- Issue a letter to each department head to solicit their support and explore opportunities for further integration of hazard mitigation into the daily activities of the community as a whole.
- Incorporate hazard mitigation for natural hazards in the next update of the master, general or comprehensive plan.
- Adopt and enforce the minimum building standards established in the current State-adopted IBC (NY edition).
- Maintain community participation in FEMA’s National Flood Insurance Program.
- Steer growth and development away from high risk locations by using the risk assessment from the hazard mitigation plan as a tool to monitor future updates of community land use plans, zoning and subdivision codes and the development review process.
- Modify work plans, policies or procedures to include hazard mitigation concepts/activities.
- Revise job descriptions to include mitigation-related duties to further institutionalize mitigation.
- Issue directives to require departments/agencies in the community to carry out certain hazard mitigation activities.
- Add hazard vulnerability to subdivision and site plan review criteria.
- Perform inventories of historic sites in hazard areas in your community to identify where special treatment may be needed to protect them from specific natural hazards.
- Require the Department of Public Works to inspect and clean debris from streams and ditches more frequently.
- Reach out to state agencies for assistance with natural hazard mitigation activities.
- Adopt (or continue to enforce) a local stormwater management plan/ordinance.
- Protect life and property in high hazard areas by limiting densities of new development.
- Increase resilience by limiting the extension of public infrastructure in high hazard areas.
- Reduce the vulnerability of future development in high hazard areas by reviewing development regulations, and modifying where needed.
- Use the risk assessment to inform future updates of the community emergency operations plan, evacuation plan, and/or post disaster recovery plan.
- Implement hazard mitigation activities through existing plans and policies.
- Sponsor training on best practices for hazard mitigation for local government staff. (Note: this may be accomplished with other local governments.)

8.4.15 MITIGATION STRATEGY

This subsection sets forth the mitigation strategy for the Village of Castleton-on-Hudson. It describes:

- Progress on 2011 HMP Initiatives
- Past Mitigation Accomplishments
- Proposed 2019 HMP Mitigation Initiatives
- Action Worksheets

8.4.15.1 Progress on 2011 HMP Initiatives

The following table was completed by the Village of Castleton-on-Hudson HMP Committee Members. It summarizes the progress that was made on the local hazard mitigation initiatives that were set forth in the community's mitigation strategy from the initial HMP in 2011.

The Village has identified no major changes in local priorities regarding natural hazards since the last version of the HMP.

PROGRESS ON 2011 HAZARD MITIGATION PLAN INITIATIVES												
2011 HMP Initiative Number	Mitigation Initiative Description	2011 HMP Priority	Hazard(s) Mitigated	Lead and Support Agencies	Status				Status Details	Relevance		Relevance Details
					Completed	Initiated but Not Completed	Ongoing Type of Activity	Not Initiated		Still Relevant - Carry Forward to Updated Mitigation Strategy	No Longer Relevant - Omit from Updated Mitigation Strategy	
CA-1	Ice and windstorm-resistant trees and landscaping practices to reduce tree-related hazards.	High	Winter storms High winds	DPW		x			Tree City Committee is applying for Tree City designation for Arbor Day Foundation, and Committee is going to be working on this. The Village has planted pear trees on west side of South Main Street. Village is also applying for a grant to hire an arborist to do a tree inventory.	x		The Committee is now the lead agency (not DPW)
CA-2	Storm water line replacement / upgrade of storm drainage system in the valley near Seaman Avenue.	Low	Street flooding	DPW				x	Limited staff time and limited funding; limited local resources have been targeted toward higher priority projects	x		If not done, road could wash away, and hill could slide. Change to high priority; Engineer needs to be contracted out. Lead will be Mayor and Village Board
CA-3	Storm water line replacement /upgrade of the stormdrainage system in the valley near Green Avenue. The pipes in this area are undersized. In addition, their age and subsequent deterioration is causing water to leach out of the pipes and in turn, instability and sliding along the slope.	Low	Flooding, Landslides	DPW				x	Limited staff time and limited funding; limited local resources have been targeted toward higher priority projects	x		Needs to be reevaluated after the recent hill collapse at bottom of Green Avenue valley. Engineer needs to be contracted out. Lead will be Mayor and Village Board
CA-4	Storm line and catch basin upgrades, as well as upgrades of outfalls, along Main Street.	Low	Street flooding	DPW				x	Limited staff time and limited funding; limited local resources have been targeted toward higher priority projects	x		Needs to be reevaluated. Engineer needs to be contracted out. Lead will be Mayor and Village Board
CA-5	Storm water line replacement in Valley at the end of Benedict Street/ upgrade old galvanized piping, their age and subsequent deterioration is causing water to leach out of pipes and in turn instability along slope.	Low	Flooding, Landslides	DPW				x	Limited staff time and limited funding; limited local resources have been targeted toward higher priority projects	x		Needs to be reevaluated. Engineer needs to be contracted out. Lead will be Mayor and Village Board
CA-CL-1	Public awareness program on Hazards, Prevention, and Mitigation: County will maintain a hazard mitigation and mitigation planning web presence (local municipal web sites to link up to this site, if they haven't already done so); all participating jurisdictions to support preparation of a joint annual hazard mitigation and mitigation planning fact sheet and its distribution; 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 each jurisdiction (incorporating as much free information as possible from the FEMA Publications Warehouse and other appropriate sources). (public education)	High	All hazards	County-led action item. CPG Member, Village Trustee					regular coordination with the public about landslide issues, along with quarterly notices for stormwater MS4 and in the quarterly village newsletter	x		County is carrying forward this County-led activity with no changes; our municipality will carry it forward as well.

PROGRESS ON 2011 HAZARD MITIGATION PLAN INITIATIVES												
2011 HMP Initiative Number	Mitigation Initiative Description	2011 HMP Priority	Hazard(s) Mitigated	Lead and Support Agencies	Status				Status Details	Relevance		Relevance Details
					Completed	Initiated but Not Completed	Ongoing Type of Activity	Not Initiated		Still Relevant - Carry Forward to Updated Mitigation Strategy	No Longer Relevant - Omit from Updated Mitigation Strategy	
CA-CL-2	Code update: Review existing local codes and ordinances against the identified hazards to determine whether there need to be any amendments to address identified hazards and, where a need is identified, modify/amend the codes/ordinances as applicable. (prevention)	Medium	All hazards	County-led action item. CPG Member, Village Trustee			x		Recently updated code regarding abandoned buildings. Steep slope ordinance was updated in 2013.	x		County is carrying forward this County-led activity with no changes; our municipality will carry it forward as well.
CA-CL-3	Code enforcement: Enforcement of NYS and Local Building Codes with Continual CEO training.(prevention)	Medium	All hazards	County-led action item. CPG Member, Village Trustee			x		Locally administered on an ongoing basis; our code enforcement official participates in required trainings	x		County is carrying forward this County-led activity with no changes; our municipality will carry it forward as well.
CA-CL-4	Ensure that local comprehensive plans incorporate natural disaster mitigation techniques through a courtesy review of draft plans by the County Planning Department(prevention)	High	All hazards	County-led action item. CPG Member, Village Trustee			x		Village Comprehensive Plan is recently expired; the formal update process is just beginning. At the appropriate time, the Village will coordinate with County planning.	x		County is carrying forward this County-led activity with no changes; our municipality will carry it forward as well.
CA-CL-5	Hold periodic workshops for municipalities regarding zoning and planning issues that arise regarding natural hazards and hazard mitigation. (prevention)	Low	All hazards	County-led action item. CPG Member, Village Trustee			x		County- led activity. Municipality attends meetings/workshops as offered by the County whenever municipal staff members have schedule availability.	x		County is carrying forward this County-led activity with no changes; our municipality will carry it forward as well.
CA-NFIP-1	Update/revise floodplain management ordinance to comply with latest FEMA regulations.	High	Flooding	Building and Planning			x		Ordinance is dated 1987. The Village will evaluate an update as needed	x		Ongoing type of activity; will be carried forward with no changes.
CA-NFIP-2	Designate/install a specific person to be your municipality's Floodplain Administrator.	Medium	Flooding	Building			x		Building Inspector	x		Ongoing type of activity (with staffing changes); will be carried forward with no changes.
CA-NFIP-3	Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances.	Low	Flooding	Building and Planning			x		Village team	x		Ongoing type of activity (with staffing changes); will be carried forward with no changes.
CA-NFIP-4	Update/revise floodplain management ordinance to be consistent with potential future new FIRMs	Low	Flooding	Building			x		FEMA has not issued new FIRMs since the last hazard mitigation plan was prepared.	x		Ongoing type of activity; will be carried forward with no changes.
CA-NFIP-5	Require staff involved in floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)	Low	Flooding	Building and Planning				x	Not agency required; municipality opted not to require CFM certification.	x		Municipality intends to explore further during next planning cycle
CA-NFIP-6	Join the Community Rating System (CRS)	Medium	Flooding	Trustees				x	Municipality opted not to enter CRS.		x	Not deemed to be an efficient use of limited resources as there are only 18 policy holders

8.4.15.2 Past Mitigation Accomplishments

NYS DHSES requires the documentation of local mitigation efforts and accomplishments since the previous hazard mitigation plan was prepared, regardless of funding source and regardless of whether the project was included in the prior plan. They note that the goal of this requirement is to provide a context for each jurisdiction's projects, act as a source of ideas for mitigation projects, and evaluate the accuracy of assumptions and engineering solutions to inform future projects, and to support future mitigation planning and its coordination with other planning, zoning, and environmental procedures within the jurisdiction.

No additional past mitigation accomplishments were reported for the Village of Castleton-on-Hudson, from the time the 2011 HMP was approved through its first update in 2019.

8.4.15.3 Proposed 2019 HMP Mitigation Initiatives

The process for selection and prioritization of mitigation actions is described in greater detail in Section 5 of the main text. The outcomes of that overall process are summarized here.

This plan proposes the actions determined to be the most appropriate for the resources and capabilities of the community based on the experience of local officials, with input from the public and other stakeholders. The relatively large number of flood mitigation actions reflects the fact that flooding is the hazard of greatest concern. Actions determined to be appropriate for the plan were reviewed during public and committee meetings and there was consensus that those intended to mitigate the effects of flooding should be the highest priorities for most communities. As with the 2011 Plan, this 2019 Plan Update includes a series of County-led initiatives with municipal participation to address a wider range of hazards. In addition, each local mitigation strategy proposes actions reflecting the commitment of the County and local jurisdictions to compliance with requirements of the NFIP. Potential actions were reviewed relative to potential financial as well as administrative and legal costs and the degree to which they would be endorsed by the public. Potential actions were reviewed during the meetings relative to their potential benefit of effectiveness in saving lives, protecting the natural environment, and reducing disruption and damage. Actions selected by each jurisdiction include activities to protect existing and future structures and infrastructure and enhance community resilience.

Part of enhancing community resilience involves adapting to a changing climate. In accordance with NYS Mitigation Planning Standard 9, plans developed with NYS DHSES-administered funds must include information on climate change as part of the hazard vulnerability analysis and contain strategies/projects to address increased vulnerability that may result from climate change. This requirement was established to encourage jurisdictions to plan for and accommodate climate change and sea level rise. By developing mitigating strategies and/or projects for hazards that are exacerbated by climate change, jurisdictions will better protect residents, avoid, or reduce damage to property and public infrastructure, and reduce personal hardship. In accordance with this State Standard, previous sections of this plan have presented information on how climate change may affect jurisdictional vulnerability or increased frequency of occurrence and/or severity in exposure to flooding, wildfire, drought, and extreme

temperatures. Climate change is addressed by mitigating the various hazards that it exacerbates. Rensselaer County and its communities have proposed a range of hazard mitigation initiatives to address their highest hazards including those hazards that are exacerbated by a changing climate.

Proposed 2019 HMP Mitigation Initiatives for Village of Castleton-on-Hudson are shown in the following table. These include both new initiatives and initiatives that were carried forward from the 2011 HMP.

PROPOSED 2019 HMP MITIGATION INITIATIVES														
Initiative Number	Initiative Name	HMP Goal(s)/ Objective(s) Being Met	Hazard(s) to be Mitigated	Description of the Problem	Description of the Solution	CF ¹² ?	EHP ¹³ Issues?	Estimated Timeline	Project Lead (Include relevant Department and Position Title)	Estimated Costs	Estimated Benefits	Potential Funding Sources ¹⁴	Priority ¹⁵	Action Worksheet Provided? ¹⁶
* NOTE: Projects related to Critical Facilities (CF) must protect the facility to the 500-year event or worst damage scenario, whichever is greater.														
1	Redevelopment Study of the Old Fort Orange Paper Co. Site *New*	3,4	Flooding, Landslides	A company has expressed interest in purchasing the Old Fort Orange Property, which has been abandoned since 2000. The site has been used for industrial purposes since 1858. The party considering purchase of the property would be performing environmental cleanup, demolition of the existing building, and construction of a new building (industrial facility). The Village is of the understanding that the new plant may require pumping on the order of about 1 million gallons of water from the Moordener Kill. The sewer system on the site may need to be replaced, repairs, and/or extended. The Village does not have a complete understanding of the level of possible contamination from the site's prior use by the paper company, or any environmental impacts that may occur as a result of drawing so much water from the creek, or the sewer requirements.	The Village would like to hire a firm to conduct a study to evaluate the long term impact of future industrial zoned development at this site and engage a hazard mitigation evaluation by an external engineering firm regarding flooding and steep slopes.	No	Possible environmental	Within the next year	Mayor and Village Board	Estimated to be up to approximately \$50k for the study	Proactive evaluation would limit negative impacts posed by this major new development	Local budget	High	Yes

¹² CF – Critical Facility. Please respond “Y” (yes) if the project’s purpose is to protect a critical facility, or “N” (no) if not.

¹³ EHP – Environmental or Historic Preservation. Please respond “Y” (yes) if the project is expected to have environmental and/or historic preservation issues, or “N” (no) if not.

¹⁴ Potential Funding Sources – A list of Federal and State sources of funding for hazard mitigation projects can be found in the latest NYS Hazard Mitigation Plan online at <https://mitigateny.avilabs.org/capabilities/administerfunding>. Jurisdictions should identify additional funding opportunities you may be aware of that are not on the state list.

¹⁵ Priority – See “Prioritization Methodology” on the next page.

¹⁶ Action Worksheet Provided. Please respond “Y” (yes) if you have filled out a detailed Action Worksheet, or “N” (no) if not. NYS DHSES State Standard 7 recommends that further consideration be given to all proposed actions by completing a NYS DHSES Action Worksheet, the State requires completion of a minimum of two NYS DHSES Action Worksheets for the jurisdiction’s highest priority projects. For jurisdictions containing a Special Flood Hazard Area, at least one of these Action Worksheets must be for a project that addresses flooding. Action Worksheets have been prepared for a minimum of two proposed mitigation initiatives. Action Worksheets are included at the end of this section, following the prioritization methodology.

PROPOSED 2019 HMP MITIGATION INITIATIVES														
Initiative Number	Initiative Name	HMP Goal(s)/ Objective(s) Being Met	Hazard(s) to be Mitigated	Description of the Problem	Description of the Solution	CF ¹² ?	EHP ¹³ Issues?	Estimated Timeline	Project Lead (Include relevant Department and Position Title)	Estimated Costs	Estimated Benefits	Potential Funding Sources ¹⁴	Priority ¹⁵	Action Worksheet Provided? ¹⁶
2	New Development and Steep Slopes *NEW*	3,4	Landslides	Members of the public have expressed concern to the Mayor regarding new construction occurring in the Village on steep slopes. There has been a general worry expressed by the public to the Village at various times over the last few years. Rain can wash stones, soil, etc. down steep slopes in the Village and onto roads including but not limited to Main Street. The Village does enforce a steep slope ordinance, which requires additional review by an engineer and the Village planning board.	The Village will look into the issue further and see what its options are to better address resident concerns regarding steep slopes. This could include coordination with / support from County Planning.	No	No	Within the next year	Village DPW	\$0- local staff time	Actions to limit washouts could minimize or eliminate damage to structures and roads.	Local budget	Moderate	No
3	Planting of Ice and Wind-Resistant Trees (2011 CA-1)	3,4	Winter storms, High winds	Trees in the Village are damaged during ice storms and severe wind events. Sometimes leading to localized power outages, structure damages, and roadway closures.	Ice and windstorm-resistant trees and landscaping practices to reduce tree-related hazards. Tree City Committee is applying for Tree City designation for Arbor Day Foundation, and Committee is going to be working on this. The Village has planted pear trees on west side of South Main Street. Village is also applying for a grant to hire an arborist to do a tree inventory.	No	No	Ongoing; with grant applications submitted at least once per year as funding streams are available	Tree City Committee	Moderate to High - Cost estimates have not yet been received for the arborist. The arborist would be asked to provide cost estimates for ice and windstorm resistant trees and landscaping practices.	Benefits would include lower probability of tree-related hazards (reduction in tree related power outages, road closures, and property damages)	Tree City Designation and Arbor Day Foundation Grants	High	No
4	Seaman Avenue Stormwater (2011 CA-2)	3,4	Flooding, Landslides	The pipes in the area of Seaman Avenue are undersized. In addition, their age and subsequent deterioration is causing water to leach out of the pipes and in turn, instability and sliding along the slope. Engineer needs to be contracted out.	Stormwater line replacement / upgrade of storm drainage system in the valley near Seaman Avenue.	No	No	5 years (by 2024); with grant applications submitted at least once per year as funding streams are available	Mayor and Village Board	Costs are estimated to be moderate but beyond Village resources	If not done, road could wash away and hill could slide. Benefits would also include elimination of roadway flooding during severe storms	New York State CFA grants; and/or FEMA PDM/HMGP with local budget for grant's matching funds and in kind services	High	Yes
5	Green Avenue Stormwater (2011 CA-3)	3,4	Flooding, Landslides	The pipes in the area of Green Avenue are undersized. In addition, their age and subsequent deterioration is causing water to leach out of the pipes and in turn, instability and sliding along the slope.	Stormwater line replacement /upgrade of the storm drainage system in the valley near Green Avenue. Needs to be reevaluated after the recent hill collapse at bottom of Green Avenue valley. Engineer needs to be contracted out.	No	No	5 years (by 2024); with grant applications submitted at least once per year as funding streams are available	Mayor and Village Board	Costs are estimated to be moderate but beyond Village resources.	Benefits would include elimination of roadway flooding during severe storms, and improved slope stability. Fire house is in the area and the project would ensure that the road heading to/from the fire house would have reliable access.	New York State CFA grants; and/or FEMA PDM/HMGP with local budget for grant's matching funds and in kind services	High	Yes

PROPOSED 2019 HMP MITIGATION INITIATIVES

Initiative Number	Initiative Name	HMP Goal(s)/ Objective(s) Being Met	Hazard(s) to be Mitigated	Description of the Problem	Description of the Solution	CF ¹² ?	EHP ¹³ Issues?	Estimated Timeline	Project Lead (Include relevant Department and Position Title)	Estimated Costs	Estimated Benefits	Potential Funding Sources ¹⁴	Priority ¹⁵	Action Worksheet Provided? ¹⁶
6	Main Street Stormwater (2011 CA-4)	3,4	Flooding	Pipes, catch basins, and outfalls along Main Street are deteriorated and undersized causing stormwater flooding.	Storm line and catch basin upgrades, as well as upgrades of outfalls, along Main Street. Needs to be reevaluated. Engineer needs to be contracted out.	No	No	5-10 years	Mayor and Village Board	Costs are estimated to be high requiring external grant support	Benefits would include elimination of roadway flooding during severe storms	New York State CFA grants; and/or FEMA PDM/HMGP with local budget for grant's matching funds and in kind services	Low	No
7	Benedict Street Stormwater (2011 CA-5)	3,4	Flooding, Landslides	The stormwater line in the Valley at the end of Benedict Street is undersized and deteriorated galvanized piping, causing water to leach out of pipes and, in turn, slope is unstable.	Stormwater line replacement /upgrade of the storm drainage system in the valley near Benedict Street. Needs to be reevaluated. Engineer needs to be contracted out.	No	No	5-10 years	Mayor and Village Board	Costs are estimated to be high and will out-weigh benefits	Benefits include elimination or reduction of the chance of a slope failure	New York State CFA grants; and/or FEMA PDM/HMGP with local budget for grant's matching funds and in kind services	Low	No
8	Participate in County-Led Hazard Mitigation Outreach (2011 CA-CL-1)	1	All hazards	Uneducated public. Residents could benefit from additional information on hazards, risks, and hazard mitigation measures they can take on their own properties to reduce damages and improve resident safety before, during and after a hazard event.	Public awareness program on Hazards, Prevention, and Mitigation: County will maintain a hazard mitigation and mitigation planning web presence (local municipal web sites to link up to this site, if they haven't already done so); all participating jurisdictions to support preparation of a joint annual hazard mitigation and mitigation planning fact sheet and its distribution; 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 each jurisdiction (incorporating as much free information as possible from the FEMA Publications Warehouse and other appropriate sources). (public education)	No	No	2020 and ongoing over next 5 years	County-led action item. CPG Member, Village Trustee	Est. \$500 for printing; other costs are staff time only	Educated public; Enhance readiness, response and recovery efforts	Village participation in County-led effort; staff time only funded through local budget	High	No
9	Request code/ordinance review by County as needed (2011 CA-CL-2)	2	All hazards	Communities are safer and more resilient when new construction and substantial improvements take into account the latest information on hazard vulnerabilities and measures to reduce risk.	Code update: Review existing local codes and ordinances against the identified hazards to determine whether there need to be any amendments to address identified hazards and, where a need is identified, modify/amend the codes/ordinances as applicable. (prevention)	No	No	Ongoing over next 5 years	County-led action item. CPG Member, Village Trustee	N/A – staff time only	Enhance readiness, response and recovery	Village participation in County-led effort; staff time only funded through local budget	Medium	No

PROPOSED 2019 HMP MITIGATION INITIATIVES														
Initiative Number	Initiative Name	HMP Goal(s)/ Objective(s) Being Met	Hazard(s) to be Mitigated	Description of the Problem	Description of the Solution	CF ¹² ?	EHP ¹³ Issues?	Estimated Timeline	Project Lead (Include relevant Department and Position Title)	Estimated Costs	Estimated Benefits	Potential Funding Sources ¹⁴	Priority ¹⁵	Action Worksheet Provided? ¹⁶
10	Send CEO to County-Led Training (2011 CA-CL-3)	2	All hazards	There can be a loss of institutional knowledge with staff changes. Even when staff is the same, continual training improves local capabilities and allows officials to better regulate activities in hazard areas to protect lives and property.	Code enforcement: Enforcement of NYS and Local Building Codes with Continual CEO training. (prevention)	No	No	One year and ongoing over next 5 years	County-led action item. CPG Member, Village Trustee	N/A – staff time only max est. \$1000	Remain current on issue and solution; proper construction in the hazard areas fosters resiliency	Village participation in County-led effort; staff time only funded through local budget	Medium	No
11	Send Comprehensive Plan Update to County for Review by County Planning (2011 CA-CL-4)	2	All hazards	Lack of hazard mitigation plan as part of the village comprehensive plan. A long term vision for the community that doesn't take into account hazard areas can put lives and property at risk. Taking into account natural hazards and hazard mitigation measures can make the community more resilient.	Ensure that local comprehensive plans incorporate natural disaster mitigation techniques through a courtesy review of draft plans by the County Planning Department (prevention)	No	No	2 years	County-led action item. CPG Member, Village Trustee	N/A-staff time only	Reduce property flooding and related damages; smart plans for development in hazard areas enhances resiliency	Village participation in County-led effort; staff time only funded through local budget	High	No
12	Attend County-Led Workshops on Natural Hazards and Hazard Mitigation (2011 CA-CL-5)	2	All hazards	When municipal staff aren't armed with information on zoning and planning issues that sometimes arise regarding natural hazards and hazard mitigation, they may make decisions that don't foster community resiliency.	Hold periodic workshops for municipalities regarding zoning and planning issues that arise regarding natural hazards and hazard mitigation. (prevention)	No	No	Ongoing over next 5 years	County-led action item. CPG Member, Village Trustee	N/A-staff time only	Reduce property flooding and related damages	Village participation in County-led effort; staff time only funded through local budget	Low	No
13	Update Floodplain Management Ordinance per New FEMA Regulations (as needed) (2011 CA-NFIP-1)	3,4	Flooding	Outdated ordinances mean that a community is not regulating to the latest codes and standards or hazard information, and that does not foster community resiliency.	Update/revise floodplain management ordinance to comply with latest FEMA regulations.	No	No	ongoing	Building and Planning	N/A-staff time only	Maintaining good standing in the NFIP by fulfilling this program requirement; homeowners need the Village in good standing in order to be able to purchase flood insurance	Local budget	High	No
14	Designate a Floodplain Administrator (2011 CA-NFIP-2)	2, 3, 4	Flooding	Staff turnover can lead to gaps in knowledge of NFIP program requirements	Designate/install a specific person to be your municipality's Floodplain Administrator.	No	No	2019	Building	N/A-staff time only	Maintaining good standing in the NFIP by fulfilling this program requirement; homeowners need the Village in good standing in order to be able to purchase flood insurance	Local budget	Medium	No
15	Add/Train sufficient members of staff to adequately enforce NFIP regulations and floodplain management ordinance (2011 CA-NFIP-3)	2	Flooding	Communities are safer when their floodplain management ordinances are administered properly.	Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances.	No	No	2019-2024	Building and Planning	N/A-staff time only	Training in FEMA 480 would be an excellent asset and capability for the Village in ensuring that decisions are made in compliance with the NFIP	Local budget	Low	No

PROPOSED 2019 HMP MITIGATION INITIATIVES														
Initiative Number	Initiative Name	HMP Goal(s)/ Objective(s) Being Met	Hazard(s) to be Mitigated	Description of the Problem	Description of the Solution	CF ¹² ?	EHP ¹³ Issues?	Estimated Timeline	Project Lead (Include relevant Department and Position Title)	Estimated Costs	Estimated Benefits	Potential Funding Sources ¹⁴	Priority ¹⁵	Action Worksheet Provided? ¹⁶
16	Update Floodplain Management Ordinance when New FIRMs are Issued (2011 CA-NFIP-4)	3,4	Flooding	Outdated ordinances mean that a community is not regulating to the latest codes and standards or hazard information, and that does not foster community resiliency.	Update/revise floodplain management ordinance to be consistent with potential future new FIRMs	No	No	ongoing	Building	N/A-staff time only	Protection for the village and residents	Local budget	Low	No
17	CFM Certification (2011 CA-NFIP-5)	2	Flooding	CFM requirement would ensure that the person administering the local ordinance is knowledgeable in FEMA-480. Without the CFM exam, it is a hope but may not be the reality.	Explore the possibility of requiring staff involved in floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs).	No	No	1 year	Mayor; Building and Planning	Perhaps \$500-\$1,000 to cover staff time, travel, lodging, and the fee for the course	Having someone able to pass the test is a good way for the Village to do due diligence in terms of adequate administration of the NFIP and maintaining good standing in the program.	Local budget	Low	No

Prioritization Methodology for Proposed 2019 HMP Mitigation Initiatives

To prioritize its mitigation initiatives, the community established a methodology to take into account several key factors. Priorities were determined by a qualitative prioritization process established by the community. A higher priority was assigned to projects where: the life/safety risk of taking no action was deemed to be unacceptably high; the project addresses one of the community's highest hazards and/or key risks; benefits were projected to equal or exceed project costs; critical facilities or key local assets were being protected; funding and staff resources were deemed to be sufficient and/or accessible for project implementation; negative impacts were not anticipated on environmental and/or historic resources or any segment of the population; and/or where there was overall support for the project from the local community (government officials, public, and stakeholders).

PRIORITIZATION METHODOLOGY FOR PROPOSED 2019 HMP MITIGATION INITIATIVES														Priority
Initiative Number	Initiative Name	Hazard(s) Addressed	Is the life/safety risk of taking no action deemed to be unacceptably high?	Does the project address one of the community's highest hazards and/or key risks?	Benefits	Costs	Are the project's benefits estimated to equal or exceed its costs?	Are critical facilities or key local assets being protected by the project?	Are funding resources sufficient and/or accessible for project implementation?	Are staff resources sufficient or available for project implementation?	Are negative impacts anticipated on environmental resources?	Are negative impacts anticipated on historic resources?	Are negative impacts anticipated on any segment of the population?	
1	Redevelopment Study of the Old Fort Orange Paper Co. Site *New*	Flooding, Landslides	No	Yes	High	Moderate to High	Yes	No	No	Moderate	No	No	No	High
2	New Development and Steep Slopes *NEW*	Landslides	No	Yes	High	Low	Yes	No	No	Moderate	No	No	No	Moderate
3	Planting of Ice and Wind-Resistant Trees (2011 CA-1)	Winter storms, High winds	No	Yes	High	Moderate to High	Yes	No	No	Moderate	No	No	No	High
4	Seaman Avenue Stormwater (2011 CA-2)	Flooding, Landslides	No	Yes	High	Moderate to High	Yes	No	No	Moderate	No	No	No	High
5	Green Avenue Stormwater (2011 CA-3)	Flooding, Landslides	No	Yes	High	Moderate to High	Yes	No	No	Moderate	No	No	No	High
6	Main Street Stormwater (2011 CA-4)	Flooding	No	Yes	High	Moderate to High	Yes	No	No	Moderate	No	No	No	Low
7	Benedict Street Stormwater (2011 CA-5)	Flooding, Landslides	No	Yes	High	Moderate to High	Yes	No	No	Moderate	No	No	No	Low
8	Participate in County-Led Hazard Mitigation Outreach (2011 CA-CL-1)	All hazards	No	Yes	High	Low	Yes	No	No	Moderate	No	No	No	High
9	Request code/ordinance review by County as needed (2011 CA-CL-2)	All hazards	No	Yes	High	Low	Yes	No	No	Moderate	No	No	No	Medium
10	Send CEO to County-Led Training (2011 CA-CL-3)	All hazards	No	Yes	High	Low	Yes	No	No	Moderate	No	No	No	Medium
11	Send Comprehensive Plan Update to County for Review by County Planning (2011 CA-CL-4)	All hazards	No	Yes	High	Low	Yes	No	No	Moderate	No	No	No	High
12	Attend County-Led Workshops on Natural Hazards and Hazard Mitigation (2011 CA-CL-5)	All hazards	No	Yes	High	Low	Yes	No	No	Moderate	No	No	No	Low
13	Update Floodplain Management Ordinance per New FEMA Regulations (as needed) (2011 CA-NFIP-1)	Flooding	No	Yes	High	Low	Yes	No	No	Moderate	No	No	No	High
14	Designate a Floodplain Administrator (2011 CA-NFIP-2)	Flooding	No	Yes	High	Low	Yes	No	No	Moderate	No	No	No	Medium

15	Add/Train sufficient members of staff to adequately enforce NFIP regulations and floodplain management ordinance (2011 CA-NFIP-3)	Flooding	No	Yes	High	Low	Yes	No	No	Moderate	No	No	No	Low
16	Update Floodplain Management Ordinance when New FIRMs are Issued (2011 CA-NFIP-4)	Flooding	No	Yes	High	Low	Yes	No	No	Moderate	No	No	No	Low
17	CFM Certification (2011 CA-NFIP-5)	Flooding	No	Yes	High	Low	Yes	No	No	Moderate	No	No	No	Low

Action Worksheets

NYS DHSES State Standard 7 recommends that further consideration be given to all proposed actions by completing a NYS DHSES Action Worksheet, the State requires completion of a minimum of two NYS DHSES Action Worksheets for the jurisdiction's highest priority projects. Furthermore, for jurisdictions containing a Special Flood Hazard Area, at least one of these Action Worksheets must be for a project that addresses flooding.

Action Worksheets prepared by the Village of Castleton-on-Hudson are included on the following pages.

Section 8.4 - Jurisdictional Annex, Village of Castleton-on-Hudson

NYS DHSES Action Worksheet			
Project Name:	Redevelopment Study of the Old Fort Orange Paper Co. Site		*New*
Project Number:	1		
Risk / Vulnerability			
Hazard of Concern:	Flooding, Landslides		
Description of the Problem:	A company has expressed interest in purchasing the Old Fort Orange Property, which has been abandoned since 2000. The site has been used for industrial purposes since 1858. The party considering purchase of the property would be performing environmental cleanup, demolition of the existing building, and construction of a new building (industrial facility). The Village is of the understanding that the new plant may require pumping on the order of about 1 million gallons of water from the Moordener Kill. The sewer system on the site may need to be replaced, repairs, and/or extended. The Village does not have a complete understanding of the level of possible contamination from the site's prior use by the paper company, or any environmental impacts that may occur as a result of drawing so much water from the creek, or the sewer requirements.		
Action or Project Intended for Implementation			
Description of the Solution:	The Village would like to hire a firm to conduct a study to evaluate the long term impact of future industrial zoned development at this site and engage a hazard mitigation evaluation by an external engineering firm regarding flooding and steep slopes.		
Is this project related to a Critical Facility?	Yes * <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
* Projects related to critical facilities must intend to protect to the 500-year flood event or the actual worst damage scenario, whichever is greater.			
Level of Protection:	n/a (this is a study)	Estimated Benefits (losses avoided):	Proactive evaluation would limit negative impacts posed by this major new development
Useful Life:	n/a (this is a study)		
Estimated Cost:	Estimated to be up to approximately \$50k for the study		
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	2019-2020
Estimated Time Required for Project Implementation:	6 months	Potential Funding Sources:	External Developer
Responsible Party: (Department/ Organization)	Mayor and Village Board	Local Planning Mechanisms to be Used in Implementation, if any:	Conducting this study would fall under the operating authority of the Village government
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Allow redevelopment without further study or understanding of natural hazard impacts is not viable; possible flood and landslide issues in addition to managing natural resources as the new facility could draw one million gallons of water per day from the Moordener Kill (potential environmental impacts) – unknowns impact the Village's ability to make a sound decision
	Require new owners to conduct a study as a contingency of property purchase	\$0	Very unlikely that a new owner would be willing to do pay for a study for the Village, as nothing requires this of them. Also, if the new owner is paying, they have an incentive to skew findings in their favor.
	Village to conduct a study to determine impacts of site redevelopment	Estimated to be up to approximately \$50,000	Best option. Puts information in the hands of the Village Board as it is making decisions on redevelopment. Limits potential negative impacts and ensures an unbiased evaluation.
Progress Report (this section to be completed at next plan update-do not fill in now)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			

Section 8.4 - Jurisdictional Annex, Village of Castleton-on-Hudson

NYS DHSES Action Worksheet			
Project Name:	Seaman Avenue Stormwater (2011 CA-2)		
Project Number:	4		
Risk / Vulnerability			
Hazard of Concern:	Flooding, landslides		
Description of the Problem:	The pipes in the area of Seaman Avenue are undersized. In addition, their age and subsequent deterioration is causing water to leach out of the pipes and in turn, instability and sliding along the slope. Engineer needs to be contracted out.		
Action or Project Intended for Implementation			
Description of the Solution:	Stormwater line replacement / upgrade of storm drainage system in the valley near Seaman Avenue.		
Is this project related to a Critical Facility?	Yes * <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
* Projects related to critical facilities must intend to protect to the 500-year flood event or the actual worst damage scenario, whichever is greater.			
Level of Protection:	100 year	Estimated Benefits (losses avoided):	If not done, road could wash away, and hill could slide. Benefits would also include elimination of roadway flooding during severe storms.
Useful Life:	40 years +_		
Estimated Cost:	Costs are estimated to be moderate but beyond Village resources		
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	5 years (by 2024); with grant applications submitted at least once per year as funding streams are available
Estimated Time Required for Project Implementation:	1-2 years from receipt of grant funding	Potential Funding Sources:	New York State CFA grants; and/or FEMA PDM/HMGP with local budget for grant's matching funds and in kind services
Responsible Party: (Department/ Organization)	Mayor and Village Board	Local Planning Mechanisms to be Used in Implementation, if any:	Drainage improvements would fall under the operating authority of the Village government
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Not viable- if not done road could wash away
	Continued patchwork repairs	Village uses existing budget funding for patches	Not viable; continued patchwork repairs have repeated costs and the Village's limited funds are being continually put into an aging, undersized, and deteriorating system.
	Drainage system upgrades	Costs are estimated to be high and beyond Village resources.	Best option; expends limited financial resources in the most responsible way
Progress Report (this section to be completed at next plan update-do not fill in now)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			

Section 8.4 - Jurisdictional Annex, Village of Castleton-on-Hudson

NYS DHSES Action Worksheet			
Project Name:	Green Avenue Stormwater (2011 CA-3)		
Project Number:	5		
Risk / Vulnerability			
Hazard of Concern:	Flooding, landslides		
Description of the Problem:	The pipes in the area of Green Avenue are undersized. In addition, their age and subsequent deterioration is causing water to leach out of the pipes and in turn, instability and sliding along the slope.		
Action or Project Intended for Implementation			
Description of the Solution:	Stormwater line replacement /upgrade of the storm drainage system in the valley near Green Avenue. Needs to be reevaluated after the recent hill collapse at bottom of Green Avenue valley. Engineer needs to be contracted out.		
Is this project related to a Critical Facility?	Yes * <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
* Projects related to critical facilities must intend to protect to the 500-year flood event or the actual worst damage scenario, whichever is greater.			
Level of Protection:		Estimated Benefits (losses avoided):	Benefits would include elimination of roadway flooding during severe storms, and improved slope stability. Fire house is in the area and the project would ensure that the road heading to/from the fire house would have reliable access.
Useful Life:			
Estimated Cost:	Costs are estimated to be high and beyond Village resources		
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	5 years (by 2024); with grant applications submitted at least once per year as funding streams are available
Estimated Time Required for Project Implementation:	1-2 years from receipt of grant funding	Potential Funding Sources:	New York State CFA grants; and/or FEMA PDM/HMGP with local budget for grant's matching funds and in kind services
Responsible Party: (Department/ Organization)	Mayor and Village Board	Local Planning Mechanisms to be Used in Implementation, if any:	Drainage improvements would fall under the operating authority of the Village government
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Not viable because slumping could continue further up the ridge
	Continued patchwork repairs	Village currently a nominal amount.	Not viable; continued patchwork repairs have repeated costs and the Village's limited funds are being continually put into an aging, undersized, and deteriorating system.
	Drainage system upgrades	Costs are beyond current Village resources.	Best option; expends limited financial resources in the most responsible way
Progress Report (this section to be completed at next plan update-do not fill in now)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			