

# Jurisdictional Annex

## Village of Chittenango

### 1. Contacts

The contacts for the Village of Chittenango regarding this plan are identified as follows:

- Elizabeth Bough Martin – Mayor  
Address: Municipal Bldg. 222 Genesee Street, Chittenango, NY 13037  
Phone: (315) 687-3936  
Email: [mayor@chittenango.org](mailto:mayor@chittenango.org)
- Deb Thayer – Village Clerk  
Address: Municipal Bldg. 222 Genesee Street, Chittenango, NY 13037  
Phone: (315) 687-3936  
Email: [dthayer@chittenango.org](mailto:dthayer@chittenango.org)

Village Website: <https://www.chittenango.org/>

### 2. Municipal Profile

#### 2.1 Population

The 2020 Census estimated that 4,896 people live in the Village of Chittenango. The Village's population has decreased by 3.6% since the 2010 Census (5,081) (U.S. Census Bureau, 2020). The median age in the Village is 37.7 years and 14.5% of the population is over the age of 65. The Village covers approximately 2.5 square miles. The Village has an equalized assessed value of approximately 233 million dollars spread across a variety of property classes.

#### 2.2 Location

The Village of Chittenango is located within the Town of Sullivan in the northwest corner of Madison County. The Village's major transportation routes include State Routes 5 and 13. The Village of Chittenango is shown in Figure 1 (Attachment A).

### 2.3 Governing Body

The Village of Chittenango is governed by a five-member Village Board, which includes the Mayor, the Deputy Mayor and three trustees.

### 2.4 Recent and Anticipated Future Development

Since the last County HMP (2017), a new specialty metals manufacturing factory was built on East Genesee Street, and an apartment complex is currently under construction on State Route 5. Additionally, a Senior Housing Apartment complex is planned on Genesee Street. No new development has occurred in the Special Flood Hazard Area, and the reported developments have not changed the Village's vulnerability to natural hazards.

## 3. Capability Assessment

### 3.1 Planning and Regulatory Capability

The Village has considered the 2017 HMP when implementing their existing plans and regulations and progressing projects. The Village's HMP update will be incorporated into and referenced by future updates of the plans, policies, ordinances, programs, studies, and reports listed in Table 1, below.

Table 1. Planning Mechanisms and Capabilities		
Planning Mechanism	Village of Chittenango	Notes
<b>Administration</b>		
Maintenance Programs	Yes	
Mitigation Planning Committee	Yes	
Mutual Aid or Shared Services Agreements	Yes	
Planning Board	Yes	
Zoning Board	Yes	
<b>Development Approvals</b>		
Building Code	Yes	
Building Code Effectiveness Grading Schedule (BCEGS) Evaluation	No	
Fire Department ISO Rating	Yes	Last rating was 4/4Y
Site Plan Review Requirements	Yes	
Special Use Permits	Yes	
<b>Funding Resources</b>		
Authority to Levy Taxes	Yes	
Capital Improvement Project Funds	Yes	
Federal Funding Programs (i.e., USDA, FEMA, others)	Yes	

General Obligation Bonds and/or Special Tax Bonds	Yes	
Impact Fees for New Development	NA	
State Funding Programs (i.e., NYSEFC, NYSOCR, NYSDEC, others)	Yes	
Utility Fees (i.e., water, sewer, stormwater, gas, electric)	Yes	Sewer District
<b>Land Use Regulations</b>		
Density Controls	No	
Flood Insurance Rate Maps	Yes	
Floodplain Ordinance	Yes	
Hillside Development Regulations	Yes	Steep slope law prohibits removal of 5 trees without a permit
Open Space Preservation	Yes	10% open space required in new subdivisions
Stormwater Management Regulations	Yes	State regulations apply
Streambank Setback Regulations	No	
Subdivision Regulations	Yes	
Transfer of Development Rights	Yes	State and Federal Programs Available for Agriculture
Zoning Ordinance	Yes	
<b>Natural Resources</b>		
Forest/Vegetation Management	No	
Stream Corridor Management	Yes	Debris clearing and bank stabilization by DPW
Stream Dumping Regulations	Yes	State rules apply
Urban Forestry and Landscape Management	Yes	Tree planting through Onondaga Co. Coop. Extension
Watershed Management	Yes	Oneida Lake Program
Wetland Regulations	Yes	State and Federal rules apply
<b>Plans</b>		
Capital Improvement Plan	No	
Comprehensive Emergency Management Plan	No	County has this plan in place
Comprehensive Plan	Yes	
Continuity of Operations Plan	No	County has this plan in place
Economic Development Plan	No	
Other Plans (specify)	Yes	Adopted Public Health Plan in response to COVID-19 pandemic (required by NYS)
<b>Programs/Organizations</b>		
Climate Smart Community	No	One more requirement to be registered.
Local Emergency Preparedness/ Disaster Response Organizations		
Local Environmental Protection Organizations		
National Weather Service StormReady Certification	No	County is certified

Outreach Programs	Yes	Education of Elected to NIMS Standards
Partnerships with private entities addressing mitigation or disaster response		
School Programs or Adult Educational Programs	Yes	Fire Safety Education, Village Government Program for 4 <sup>th</sup> Graders
<b>Staff Positions</b>		
Civil Engineer	Yes	One for wastewater, one for civil
Code Enforcement Officer	Yes	
Emergency Manager	Yes	Mayor
Floodplain Administrator	Yes	Code Enforcement Officer
Planner/GIS Coordinator	No	County assists
<b>Technical Abilities</b>		
Grant Writing	No	
Hazard Information Centers	No	
Hazard Warning Systems	Yes	

### 3.2 Emergency Communications, Routes, and Shelters

The Village shares emergency communications with the public via their website and Facebook page. The Village is also covered by Madison County's emergency communication system. Major transportation routes within the Village include State Routes 5 and 13. The Village's emergency shelter location is summarized in Table 2, below.

<b>Table 2. Emergency Shelters</b>						
<b>Facility</b>	<b>Address</b>	<b>Owner/ Occupant</b>	<b>Support medical needs?</b>	<b>ADA Compliant?</b>	<b>Pets accepted?</b>	<b>Notes</b>
Chittenango High School	150 West Genesee Street, Chittenango, NY 13037	Chittenango CSD	Yes	Yes	No	Backup power available

### 3.3 Temporary and Permanent Housing Locations

The potential temporary and permanent housing locations listed below were identified for displaced residents in the Village of Chittenango based on the 2017 NYS Hazard Mitigation Planning Standards. It is noted that formal agreements would need to be established in order to use privately owned properties.

- **Potential Temporary Housing Locations**
  - Schuyler Park - 102 Schuyler Drive, Chittenango, NY 13037
  - Sullivan Park - Lake Street, Chittenango, NY 13037
- **Potential Permanent Housing Locations**
  - Privately owned vacant land throughout Town of Sullivan (coordination required with landowners for potential property purchase or subdivisions)

## 4. Hazard Vulnerabilities and Ranking

### 4.1 Risk Assessment

The Village reviewed multiple natural hazards to include in the HMP update. The hazard analysis criteria is summarized in Table 3. The Village's natural hazard analysis results are provided in Table 4.

**Table 3. Hazard Analysis Criteria**

Score	Extent	Onset	Impact	Frequency	Total Score	Overall Vulnerability
1	One location	Days of warning	Minor damages/ injuries	Rare	4 to 5	Low
2	Several locations	Hours of warning	Moderate damages/ injuries	Infrequent	6 to 8	Moderate
3	Large area	No warning	Severe damages/ injuries	Regular	9 to 12	High

**Table 4. Natural Hazard Vulnerability and Risk Assessment**

Hazard Event	Extent	Onset	Impact (Damages and Injury)	Frequency	Total Score and Overall Vulnerability	Jurisdiction Rank
Flood	2	2	2	3	9 - Moderate	1
Tornado	2	3	3	1	9 - High	2
Severe Thunderstorm/ Wind/Hail	3	1	2	3	9 - High	3
Severe Winter Storm	3	1	2	3	9 - High	4
Ice Storm	3	1	3	1	8 - Moderate	5
Extreme Temperatures	3	1	2	2	8 - Moderate	6
Ice Jam	2	3	2	1	8 - Moderate	7
Earthquake	3	3	1	1	8 - Moderate	8
Wildfire	2	3	1	1	7 - Moderate	9
Landslide	2	3	1	1	7 - Moderate	10
Drought	3	1	1	1	6 - Moderate	11



## 4.2 Critical Facilities

Critical facilities include any facility that is critical for emergency response or that requires special emergency response in the event of hazardous incidents as identified by the Village of Chittenango. Table 5, below, denotes the types and locations of critical facilities within the Village. Critical facilities are also shown on Figure 1 (Attachment A).

<b>Table 5. Critical Infrastructure in the Village of Chittenango</b>		
<b>Facility Name</b>	<b>Address</b>	<b>Located in Floodplain</b>
Chittenango Fire Dept.	417 Genesee St	500-year
Chittenango High School	150 West Genesee St	No
Chittenango Village DPW	730 Oneida St	No
Chittenango Village Offices and Police Dept.	222 Genesee St	No
Electrical Substation	Route 173	No
Nursing Home	331 Russell St	100-year
Sewer Lift Station	261 Seneca St	No
Sullivan Free Library	101 Falls Blvd	100-year and 500-year
Verizon	293 Genesee St	100-year and 500-year

## 5. Priority Hazard Events

The following sections detail the priority hazard events identified by the jurisdiction. Additional information about each hazard including frequency, history, and severity within Madison County is included within Section 5.0 of the main body of the Hazard Mitigation Plan. Historical tornado and earthquake records are reported for the last ten years (2012-2022). All other hazard profiles report events that have occurred in the last five years (2017-2022).

The probability of climate-related hazard events is expected to increase in the future within the Village of Chittenango. Climate change is expected to cause an increase in weather volatility, rising sea level, and greater temperature extremes.

Past occurrences of hazard events are indicated in their respective profiles below. Some hazards do not have historical records, but they were profiled for future mitigation planning consideration.

### 5.1 Flood

#### 5.1.1 *Description*

For a description of this hazard, please see Section 5.2 of the main body of the plan.

#### 5.1.2 *Hazard Vulnerability*

The Village's overall vulnerability for a flood is high, as documented in their hazard analysis in Section 4.1. The Village is drained by Chittenango Creek, which flows through the center of the Village. FEMA provides flood insurance rate maps for the Village of Chittenango. The 100-year floodplain corresponds with areas that are at high risk for flooding (1% likely to flood any given year), and areas within a 500-year floodplain are at moderate flood risk (0.2% likely to flood in any given year). Figure 1 (Attachment A) shows FEMA mapped floodplains within the Village. Table 6 summarizes the amount of land within the Village of Chittenango that is located within 100-year and 500-year floodplains, as mapped by FEMA. The Chittenango Fire Department is within the 500-year floodplain of Chittenango Creek. A nursing home on Russell St is in the mapped 100-year floodplain, and the Verizon building on Genesee St



and the Sullivan Free Library are located in the mapped 100-year and 500-year floodplains.

<b>Table 6. Summary of Areas in Floodplains</b> <i>(Source: FEMA Q3 Digital Floodplain Data, 1996)</i>		
<b>Village of Chittenango Total Area</b>	<b>Percent of Total Area</b>	
	<b>100-Year Floodplain</b>	<b>500-Year Floodplain</b>
654.6 acres	14.4%	1.4%

### 5.1.3 Historical Hazard Occurrences and Damage Estimates

According to the NCDC, in the past five years, no flood records were noted to specifically impact the Village of Chittenango. The Village reports local records of flooding along Chittenango Creek. The Village has not experienced flooding issues at the four facilities mentioned above that are located in mapped floodplains. The Village's Wastewater Treatment Plant is also in the 100-year floodplain (outside of the Village limits in the Town of Sullivan), but the Village has not experienced flooding issues at this facility to date. As described in Section 6.0 of this annex, NFIP loss claims data were requested from FEMA and a response is pending. According to the County's 2017 HMP, there are two repetitive loss properties in the Village, both single-family homes. Each property has experienced two flood losses as of 12/31/2016, with total payments of \$26,845. More current repetitive loss data from FEMA is pending.

### 5.1.4 Future Potential Impacts

The Village's overall vulnerability for a flood remains high. Properties along Chittenango Creek are most vulnerable to flooding. The Village proposed two flood-related mitigation actions for the HMP update, which are detailed in Section 7 of this annex. Additional flood-related mitigation action alternatives for Chittenango Creek within the Village are discussed in the Resilient NY Flood Mitigation Initiative Report (2022) developed by Ramboll. Once implemented, these projects will reduce the Village's vulnerability to flooding. The frequency and magnitude of flood events may increase due to climate change.

## 5.2 Tornado

### 5.2.1 *Description*

For a description of this hazard, please see Section 5.8 of the main body of the plan.

### 5.2.2 *Hazard Vulnerability*

The Village's overall vulnerability for a tornado is high, as documented in their hazard analysis in Section 4.1. The entire Village of Chittenango is susceptible to damages from a tornado. A tornado can result in severe damage to homes, over-turned automobiles and leveling of utility lines. This event is highly likely to result in damages to private and public infrastructure and property. Most development in the southern part of the Village is in a valley surrounded by steep hills, while topography in the northern portion of the Village is much flatter. If a tornado hit in the flatter portion of the Village, it could create a longer track and cause more damage. Even if only a small area is affected, a tornado could result in severe damage to homes, over-turned automobiles and leveling of utility lines.

### 5.2.3 *Historical Hazard Occurrences and Damage Estimates*

Three tornados have occurred in Madison County within the past ten years, but none of these records were located in the Village of Chittenango. The NCDC reports no specific tornado events that occurred in the Village of Chittenango in the last 10 years.

### 5.2.4 *Future Potential Impacts*

The entire Village of Chittenango remains susceptible to a tornado. Damages from a tornado event can be devastating, and the frequency and magnitude of tornado events may increase due to climate change.

### 5.3 Severe Thunderstorm, Windstorm, or Hail

#### 5.3.1 *Description*

For a description of these hazards, please see Section 5.1 of the main body of the plan.

#### 5.3.2 *Hazard Vulnerability*

The Village's overall vulnerability for a severe thunderstorm, windstorm, or hail event is high, as documented in their hazard analysis in Section 4.1. The entire Village is susceptible to damages from a severe thunderstorm, windstorm, or hail event. Fallen trees from severe winds can damage overhead utility lines, resulting in power outages. In addition, these events are likely to result in damages to private and public infrastructure and property. Damages to the Village's critical infrastructure or primary transportation routes (State Routes 5 and 13) would be most impactful to Village residents. A severe storm event would have the greatest impact on the heavily developed portions of the Village, which are generally along the State Routes 13 and 5 and Lake Street corridors, and neighborhoods in between these areas.

#### 5.3.3 *Historical Hazard Occurrences and Damage Estimates*

The NCDC reports one specific severe storm events that occurred in the Village of Chittenango within the past five years, which is summarized in Table 7, below. Actual damages were likely greater than those estimated by the NCDC.

Table 7. Severe Storm Event Records for the Village of Chittenango				
Event Type	Date	Magnitude	Estimated Property Damage	Estimated Crop Damage
Thunderstorm Wind	10/15/2017	50 knots	\$20,000.00	-
Total			\$20,000.00	None reported

#### 5.3.4 *Future Potential Impacts*

The Village's overall vulnerability for a severe thunderstorm, windstorm, or hail event remains high. The frequency and magnitude of severe storm events may increase due to climate change.

### 5.4 **Severe Winter Storm**

#### 5.4.1 *Description*

For a description of this hazard, please see Section 5.3 of the main body of the plan.

#### 5.4.2 *Hazard Vulnerability*

The Village's overall vulnerability for a severe winter storm is high, as documented in their hazard analysis in Section 4.1. The entire Village of Chittenango is susceptible to damages from a severe winter storm event. The Village Department of Public Works clears Village streets during heavy snow events. Roadway safety is a major concern during severe winter storm events. Damages to the Village's critical infrastructure or primary transportation routes (State Routes 5 and 13) would be most impactful to Village residents. A severe winter storm would have the greatest impact on the heavily developed portions of the Village, which are generally along the State Routes 13 and 5 and Lake Street corridors, and neighborhoods in between these areas.

#### 5.4.3 *Historical Hazard Occurrences and Damage Estimates*

The Village of Chittenango has been affected by a number of severe winter storm events reported for Madison County, which are described in Section 5.3 of the main body of the plan. These storms typically affect more than one area within the County. The NCDC does not report any winter storm damage estimates specific to the Village of Chittenango.

#### 5.4.4 *Future Potential Impacts*

The Village's overall vulnerability for a severe winter storm remains high. The severity and frequency of severe winter storms may increase due to climate change.

### 5.5 Ice Storm

#### 5.5.1 *Description*

For a description of this hazard, please see Section 5.7 of the main body of the plan.

#### 5.5.2 *Hazard Vulnerability*

The Village's overall vulnerability for an ice storm is moderate, as documented in their hazard analysis in Section 4.1. An ice storm typically affects most or all of the County. Damages to the Village's critical infrastructure or primary transportation routes would be most impactful to Village residents. An ice storm would have the greatest impact on the heavily developed portions of the Village, which are generally along the State Routes 13 and 5 and Lake Street corridors, and neighborhoods in between these areas.

#### 5.5.3 *Historical Hazard Occurrences and Damage Estimates*

The NCDC reports one ice storm in Madison County within the past five years, which affected a large portion or all of the County. The reported ice storm occurred on February 10, 2021 and is described in Section 5.7 of the main body of the plan. No damage estimates related to ice storms are reported specific to the Village of Chittenango.

#### 5.5.4 *Future Potential Impacts*

The Village's overall vulnerability for an ice storm remains moderate. The Village DPW and private utility companies will continue to maintain road right-of-ways and utility corridors to prevent significant infrastructure damage during ice storms.

## 5.6 Extreme Temperatures

### 5.6.1 *Description*

For a description of this hazard, please see Section 5.6 of the main body of the plan.

### 5.6.2 *Hazard Vulnerability*

The Village's overall vulnerability for an extreme temperature event is moderate, as documented in their hazard analysis in Section 4.1. Extreme temperatures typically affect most or all of the County, and the entire Village of Chittenango is susceptible to this hazard. Extreme temperature events tend to have greater impacts on vulnerable populations, including older adults (over 65 years), young children (under 5 years), people with health problems, or people who cannot afford to sufficiently heat or cool their homes. Approximately 3.1% of the population in the Village is under 5 years old, and 14.5% of the population is over 65 years old. Approximately 16.2% of the Village's population is below the poverty level. These populations are at a higher risk of being impacted by extreme temperature events.

### 5.6.3 *Historical Hazard Occurrences and Damage Estimates*

The NCDC reports three extreme temperatures in Madison County within the past five years. Each of these events was an extreme cold/wind chill reported countywide. Details of these events are described in Section 5.5 of the main body of the plan. No damage estimates related to extreme temperatures are reported specific to the Village of Chittenango.

### 5.6.4 *Future Potential Impacts*

The Village's overall vulnerability for an extreme temperature event remains moderate. Extreme temperatures are likely to increase in frequency and extremity in the future due to climate change.



## **5.7 Ice Jam**

### **5.7.1 *Description***

For a description of this hazard, please see Section 5.11 of the main body of the plan.

### **5.7.2 *Hazard Vulnerability***

The Village's overall vulnerability for an ice jam is moderate, as documented in their hazard analysis in Section 4.1. Within the Village of Chittenango, properties along Chittenango Creek are most vulnerable to ice jams.

### **5.7.3 *Historical Hazard Occurrences and Damage Estimates***

The U.S. Army Corps of Engineers (USACE) Cold Regions Research and Engineering Laboratory (CRREL) reports no specific ice jam events for the Village of Chittenango in the past five years. The Village reported local records of ice jams along Chittenango Creek. There are no specific damage estimates for the Village related to ice jams.

### **5.7.4 *Future Potential Impacts***

The Village's overall vulnerability for an ice jam remains moderate. Properties along Chittenango Creek are vulnerable to ice jams. The frequency and magnitude of ice jam events may increase due to climate change.

## **5.8 Earthquake**

### **5.8.1 *Description***

For a description of this hazard, please see Section 5.5 of the main body of the plan.

### **5.8.2 *Hazard Vulnerability***

The Village's overall vulnerability for an earthquake is moderate, as documented in their hazard analysis in Section 4.1. According to Figure 5.8 of

the main body plan, the entire County has a PGA Hazard rating of 8-10%. An earthquake could impact any location within the Village, though historically, the Village has not experienced significant earthquake damages. Earthquakes that damage the Village's critical infrastructure or emergency transportation routes would result in the most significant impacts to the Village and its residents.

#### *5.8.3 Historical Hazard Occurrences and Damage Estimates*

According to the USGS Earthquake Catalog, there are no historical records of earthquakes occurring specifically in the Village of Chittenango. An earthquake has the potential to cause hundreds of thousands of dollars in damages.

#### *5.8.4 Future Potential Impacts*

The Village's overall vulnerability for an earthquake remains moderate. The Village of Chittenango is within an area of light seismic activity. The Village is not likely to experience significant earthquake damages.

### **5.9 Wildfire**

#### *5.9.1 Description*

For a description of this hazard, please see Section 5.10 of the main body of the plan.

#### *5.9.2 Hazard Vulnerability*

The Village's overall vulnerability for a wildfire is moderate, as documented in their hazard analysis in Section 4.1. Undeveloped lands such as forest and open fields and brush lands within the Village are susceptible to wildfires (primarily the southern and eastern portions of the Village).

#### *5.9.3 Historical Hazard Occurrences and Damage Estimates*

According to Figure 5.14 (Appendix A of the main body of the plan), the Village of Chittenango experienced 0.9 to 1.3 wildfires per square mile from

2003 to 2017 according to reports from the NYSDEC. A wildfire has the potential to cause hundreds of thousands of dollars in damages.

#### *5.9.4 Future Potential Impacts*

The Village's overall vulnerability for a wildfire remains moderate. Approximately 20% of the Village contains undeveloped lands, and these areas are most susceptible to a wildfire. Wildfires may increase in frequency and magnitude in the future due to climate change.

### **5.10 Landslide**

#### *5.10.1 Description*

For a description of this hazard, please see Section 5.4 of the main body of the plan.

#### *5.10.2 Hazard Vulnerability*

The Village's overall vulnerability for landslide is moderate, as documented in their hazard analysis in Section 4.1. The Village of Chittenango is mapped as an area of low incidence for landslides (Figure 5.6, Appendix A of the main body of the plan). Areas with steep slopes throughout the Village (based on mapped soil units with slopes over 30%) are shown in Figure 1 (Attachment A). Steep slopes are primarily located in the southwestern and eastern portions of the Village, along the east side of Route 5, Lake Street, Brinkerhoff Hill Road, and Madison Street.

#### *5.10.3 Historical Hazard Occurrences and Damage Estimates*

There are no historical records of landslides occurring in the Village of Chittenango reported by the NCDC. The Village reports a landslide occurring behind the Village Offices in 2016. This landslide occurred when the agricultural field upslope of the Village Office was tilled, and a heavy rainstorm occurred before the field was re-planted. A landslide has the potential to cause hundreds of thousands of dollars in damages.

#### 5.10.4 Future Potential Impacts

The Village's overall vulnerability for landslide remains moderate. Areas with steep slopes, including along Chittenango Creek, the east side of Route 5, Lake Street, Brinkerhoff Hill Road, and Madison Street, may be susceptible to landslides in the future.

### 5.11 Drought

#### 5.11.1 Description

For a description of this hazard, please see Section 5.9 of the main body of the plan.

#### 5.11.2 Hazard Vulnerability

The Village's overall vulnerability for drought is moderate, as documented in their hazard analysis in Section 4.1. Agricultural areas would experience the most significant impacts. There are a few agricultural properties in Chittenango, generally in the northern and eastern portions of the Village. Developed properties in the Village are served by a municipal water system (operated by the Onondaga County Water Authority - OCWA), which reduces the risk of water supply limitations during a drought.

#### 5.11.3 Historical Hazard Occurrences and Damage Estimates

The NCDC reports no specific drought events for the Village of Chittenango. The Village also did not note any local records of past droughts.

#### 5.11.4 Future Potential Impacts

The Village's overall vulnerability to a drought remains moderate. Agricultural properties would experience the most significant impacts related to a drought, though there are only a few agricultural areas in the Village. Drought events are likely to increase in frequency and magnitude in the future due to climate change.

## 6. National Flood Insurance Program

Long-term mitigation of potential flood impacts can be best achieved through comprehensive floodplain management regulations and enforcement at a local level. The National Flood Insurance Program (NFIP), regulated by FEMA, aims to reduce the impact of flooding on private and public structures by providing affordable insurance for property owners. The program encourages local jurisdictions to adopt and enforce floodplain management regulations in order to mitigate the potential effects of flooding on new and existing infrastructure (FEMA, 2015).

Communities that participate in the NFIP adopt floodplain ordinances. If an insured structure incurs damage costs that are over 50% of its market value, the owner must comply with the local floodplain regulations when repairing or rebuilding the structure. A structure could be rebuilt at a higher elevation, or it could be acquired and demolished by the municipality or relocated outside of the floodplain. Insured structures that are located within floodplains identified on FEMA's Flood Insurance Rate Maps (FIRMs) may receive payments for structure and content losses if impacted by a flood event.

The NFIP and other flood mitigation actions are important for the protection of public and private property and public safety. Flood mitigation is valuable to communities because it:

- Creates safer environments by reducing loss of life and decreasing property damage;
- Allows individuals to minimize post-flood disaster disruptions and to recover quicker (homes built to NFIP standards generally experience less damage from flood events, and when damage does occur, the flood insurance program protects the homeowner's investment); and
- Lessens the financial impacts on individuals, communities, and other involved parties (FEMA, 2015).

The Village of Chittenango currently participates in the NFIP (community ID 360395), and its FIRM(s) became effective on 2/1/1985. The Village joined the NFIP on this same date. NFIP loss claims data were requested from FEMA and a response is pending. According to the County's 2017 HMP, there are two repetitive loss properties in the Village, both single-family homes. Each property has experienced two flood losses as of 12/31/2016, with total payments of \$26,845. More current repetitive loss data from FEMA is pending. The Village will continue to comply with the NFIP by enforcing

floodplain management requirements and regulating new development in Special Flood Hazard Areas, among other required duties.



## 7. Mitigation Strategy and Prioritization

### 7.1 Past, Completed, and Ongoing Initiatives

The Village proposed two mitigation actions in the 2017 Madison County HMP, and the status of each action is summarized in Table 8, below. None of the Village's 2017 mitigation actions were re-included for the 2022 HMP update.

Table 8. Status of 2017 Mitigation Actions				
Project Name	Description	Hazard(s) Mitigated	Lead Agency	Status
Chittenango 1	Construct diversion structures to channel storm water around the development. This will require cooperation with the Town of Sullivan as this is the source of the water.	Flood	Village of Chittenango Public Works	Not progressed yet - problem areas are located outside of the Village limits. This mitigation action was not re-included in the HMP update.
Chittenango 2	Initiate regular maintenance dredging of box culvert under the Old Erie Canal (aqua duct) reduces restrictions at the north end of the village that back-up through the downtown corridor.	Flood	Village of Chittenango Public Works	This is completed yearly by the NYS Canal Corporation; not a Village action. NYS Canals completes minimal dredging of 1-2 out of 3 culverts. This mitigation action was not re-included in the HMP update since it is not under the Village's jurisdiction and is executed by NYS Canals.

Table 8. Status of 2017 Mitigation Actions

Project Name	Description	Hazard(s) Mitigated	Lead Agency	Status
Chittenango 3	Approximately 100 residences in the downtown area of the Village have their utilities in basements, below the floodplain. Move utilities from below grade elevation to first floor of residential structures.	Flood	Village of Chittenango Code Enforcement	The Village has provided recommendations to private properties for drainage improvements. The Valley Acres neighborhood still experiences drainage issues, which is addressed in one of the Village's new mitigation actions. This action was not re-included in the HMP update.
Chittenango 4	Annual streambank inspections to identify log-jams, gravel deposits or other conditions which restrict the flow of Chittenango Creek within the Village of Chittenango. Once identified, restrictions are removed by the Village DPW crews, pending any DEC approvals and/or permits.	Flood	Village of Chittenango Public Works	The Village of Chittenango Public Works completes this ongoing action as needed in accordance with DEC permits. This action was not re-included in the HMP update because it is an ongoing responsibility of the DPW that is adequately addressed.

## 7.2 Proposed Mitigation Actions

The Village proposed two new mitigation actions to be included in the HMP update. These actions are described in Table 9, below and on worksheets included in Attachment A. Additional flood-related mitigation action alternatives for Chittenango Creek are discussed in the Resilient NY Flood Mitigation Initiative Report (2022) developed by Ramboll. The potential future actions included in the Resilient NY report involve:

- Reconnection of the Feeder Canal to the Erie Canal (detailed hydraulic modeling needed)
- Evaluation of berm removal between Tuscarora Road and Russell Street (detailed hydraulic modeling needed)
- Completion of a snagging and shoaling study to determine if routine stream maintenance would reduce ice jams and related flooding
- Evaluation of potential flow diversion to overland areas during ice jams (detailed hydraulic modeling needed)

The potential flood mitigation projects listed above were not included by the Village as mitigation actions for the HMP update, but they are detailed in the Resilient NY report.

Table 9. Proposed Hazard Mitigation Actions Village of Chittenango									
Action ID	Mitigation Action	Hazard(s) Mitigated	Implementing Agencies (Lead* & Support)	Planning Mechanism	Timeframe	New or Existing Development	Estimated Cost	Funding Source(s)	Priority
Chittenango 1	Valley Acres Stormwater Engineering Study	Flood	Chittenango Village Board*, Madison County SWCD	None	1 year	Existing	\$50,000	Village Budget	1
Chittenango 2	Chittenango Creek Feeder Dam Maintenance Coordination and Weir Rehabilitation	Flood	Chittenango Village Board*, NYS Canal Corporation	Resilient NY Flood Mitigation for Chittenango Creek (Ramboll)	1-5 years	Existing	\$100,000	Village Budget, FEMA - BRIC	2

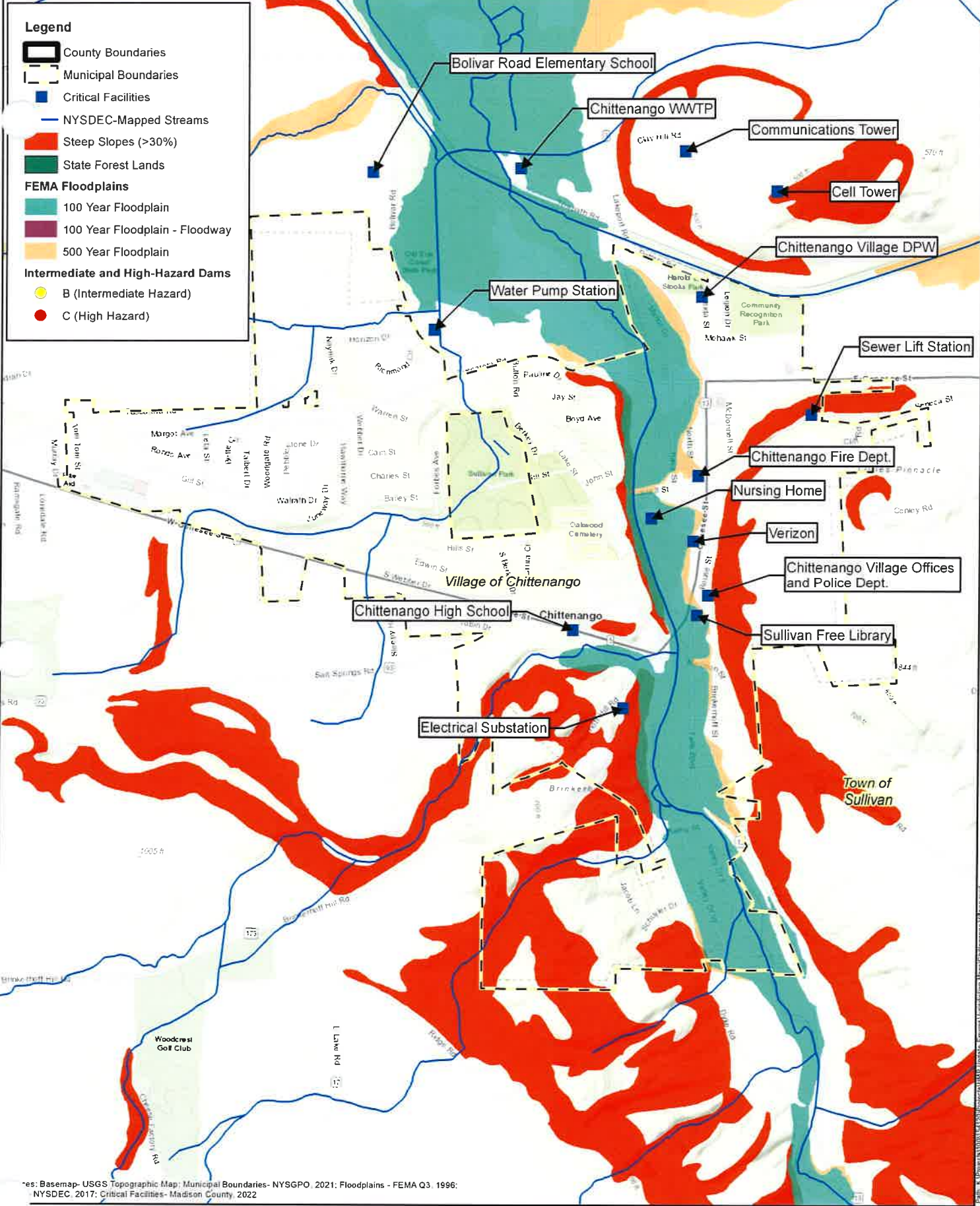
### **7.3 Cost-Benefit Analysis**

Each of the Village's proposed mitigation actions were evaluated and prioritized using the STAPLEE cost-benefit analysis described in Section 7.2.3 of the main body of the plan. The Village's STAPLEE worksheet is provided in Attachment A. The STAPLEE analysis considers the following lenses of evaluation: social, technological, administrative, political, legal, economic, and environmental. It also considers the level of overall costs and benefits of the action.

## **Attachment A**

### **Figure 1, Mitigation Action Worksheets, and STAPLEE Worksheet**







## Madison County HMP Update Mitigation Action Worksheet

**Jurisdiction:** Village of Chittenango

Mitigation Action	
<b>Project ID:</b>	Chittenango 1
<b>Project Name:</b>	Valley Acres Stormwater Engineering Study
Risk/Vulnerability	
<b>Hazard of Concern:</b>	Flood
<b>Description of the Problem:</b>	Inadequate stormwater drainage causes recurring flooding issues in the Valley Acres neighborhood.
Proposed Action	
<b>Description of the Solution:</b>	Conduct an engineering study to review alternatives to fix stormwater issues. Green infrastructure such as rain gardens may be incorporated into the design.

Is this project related to a Critical Facility? ☐ Yes ☒ No

*(If yes, this project must intend to protect to the 500-year flood event or the actual worst damage scenario, whichever is greater)*

Level of Protection:	Low (for engineering study)	Estimated Benefits (losses avoided):	Reduced flood damages
Useful Life:	10 years		
Estimated Cost:	\$50,000		

Plan for Implementation			
Priority (High, Medium, Low):	High	Responsible Organization:	Chittenango Village Board, Madison County SWCD
Desired Timeframe for Implementation:	1 year	Potential Funding Sources:	Village Budget
Estimated Time Required to Implement:	1 year	Local Planning Mechanisms to be used in Implementation, if any:	None

Three Alternatives Considered (Including No Action)			
	Action	Estimated Cost	Evaluation
Alternatives:	No Action	\$0	No change from existing conditions, stormwater issues continue.
	Conduct an engineering study	\$50,000	Will allow Village to review alternatives and select most comprehensive stormwater drainage solution
	Construct new stormwater infrastructure	\$500,000	Ultimate action needed to solve problems after engineering study complete

Progress Report (for Plan Maintenance)	
Date of Status Report:	
Summary of Progress:	
Evaluation of the Problem and/or Solution:	

## Madison County HMP Update Mitigation Action Worksheet

**Jurisdiction:** Village of Chittenango

Mitigation Action	
<b>Project ID:</b>	Chittenango 2
<b>Project Name:</b>	Chittenango Creek Feeder Dam Maintenance Coordination and Weir Rehabilitation
Risk/Vulnerability	
<b>Hazard of Concern:</b>	Flood
<b>Description of the Problem:</b>	The Chittenango Creek Feeder Dam is in need of regular maintenance to reduce sedimentation and reduce flood risk for properties near this waterbody. The NYS Canals Corporation has jurisdiction of this waterbody. Several culverts require dredging, and the weir is in need of rehabilitation.
Proposed Action	
<b>Description of the Solution:</b>	Coordinate with the NYS Canals Corporation to develop a maintenance plan for the canal. Complete rehabilitation of deteriorating weir.

Is this project related to a Critical Facility? ☐ Yes ☒ No

*(If yes, this project must intend to protect to the 500-year flood event or the actual worst damage scenario, whichever is greater)*

Level of Protection:	Medium	Estimated Benefits (losses avoided):	Reduced flood risk
Useful Life:	Short-term (coord); 30+ yrs (weir rehab)		
Estimated Cost:	\$100,000		

Plan for Implementation			
Priority (High, Medium, Low):	Medium	Responsible Organization:	Chittenango Village Board NYS Canal Corporation
Desired Timeframe for Implementation:	1-5 years	Potential Funding Sources:	Village Budget FEMA - BRIC
Estimated Time Required to Implement:	2 years	Local Planning Mechanisms to be used in Implementation, if any:	Resilient NY Flood Mitigation for Chittenango Creek (Ramboll)

Three Alternatives Considered (Including No Action)			
	Action	Estimated Cost	Evaluation
Alternatives:	No Action	\$0	No change from existing conditions, weir continues to deteriorate
	Develop plan with NYS Canals Corp to address weir deterioration	\$5,000	A formal plan will help with coordination between the Village and NYSCC.
	Develop plan with NYS Canals Corp and complete weir rehabilitation	\$100,000	A formal plan will help with coordination between the Village and NYSCC, and the useful life of the weir will increase.

Progress Report (for Plan Maintenance)	
Date of Status Report:	
Summary of Progress:	
Evaluation of the Problem and/or Solution:	