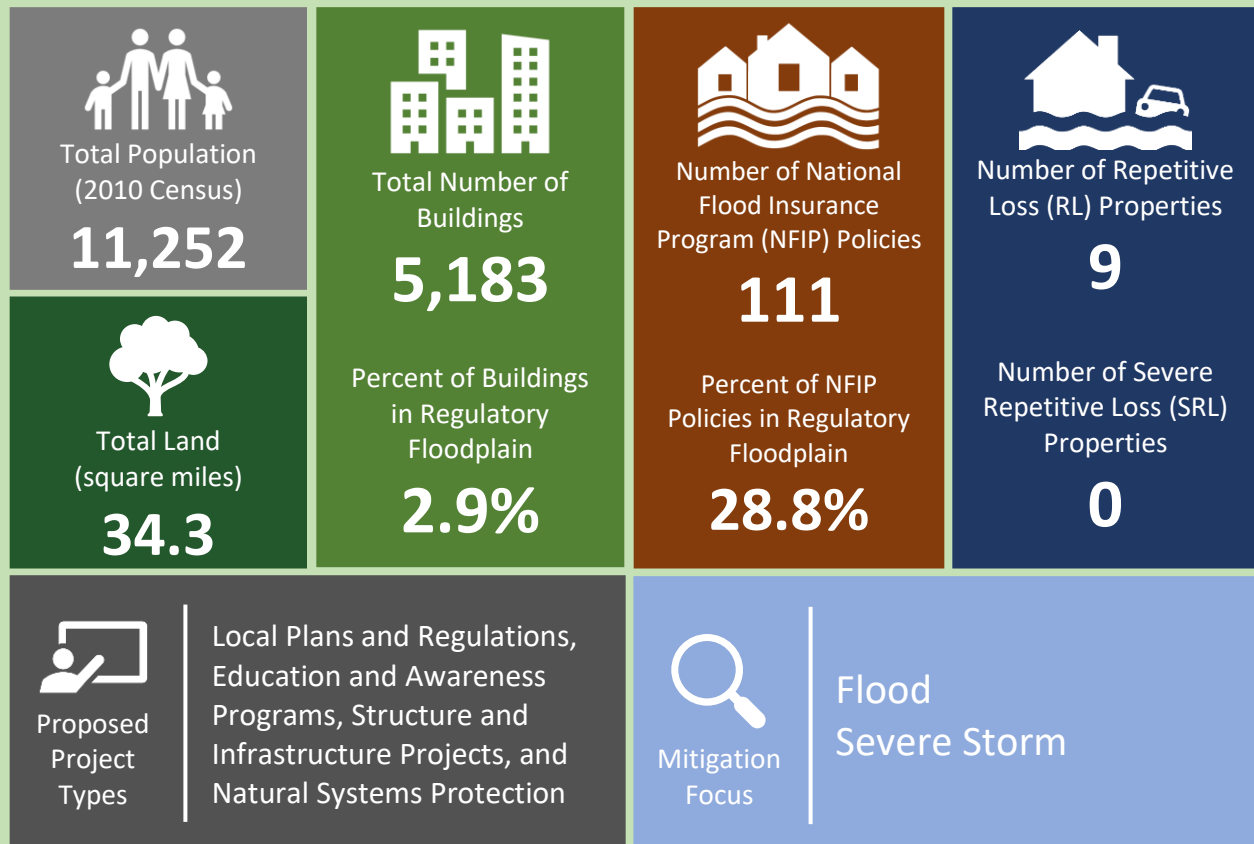




MUNICIPAL ANNEX | Town of Chenango





9.5 Town of Chenango

This section presents the jurisdictional annex for the Town of Chenango. It includes resources and information to assist public and private sectors to reduce losses from future hazard events. This annex is not guidance of what to do when a disaster occurs. Rather, this annex concentrates on actions that can be implemented prior to a disaster in order to reduce or eliminate damage to property and people. This annex includes a general overview of the municipality and who in the town participated in the planning process; an assessment of the Town of Chenango’s risk and vulnerability; the different capabilities utilized in the town; and an action plan that will be implemented to achieve a more resilient community.

9.5.1 Hazard Mitigation Planning Team

The following individuals have been identified as the Town of Chenango’s hazard mitigation plan primary and alternate points of contact.

Primary Point of Contact	Alternate Point of Contact
Name: Joanne Klenovic Title: Town Supervisor Phone Number: 607-648-4809x6 Address: 1529 State Route 12, Binghamton, NY 13901 Email: supervisor@townofchenango.com	Name: Alex Urda / Joy Kasmarcik Title: Town Engineer / Highways Phone Number: 607-779-7033 Address: 1529 State Route 12, Binghamton, NY 13901 Email: alex@urdaengineering.com / Joy.Kasmarcik@townofchenango.com
Floodplain Administrator	
Name: John Freer Title: Code Enforcement Phone Number: 607-648-4809 x103 Address: 1529 State Route 12, Binghamton, NY 13901 Email: john.freer@townofchenango.com	

9.5.2 Municipal Profile

The Town of Chenango is located in the eastern part of Broome County, New York and is northeast of Binghamton. The Chenango River flows along the eastern border of the town. Home rule is strong in New York State and thus, each town and village has its own governing body. The Town of Chenango is governed by a Supervisor and four council members. The Town of Chenango has a total area of 34.3 square miles. The Town of Chenango is located in the eastern part of Broome County, NY and is northeast of Binghamton. The Chenango River is the eastern town line. The Town includes the communities and hamlets of Castle Creek, Chenango Bridge, Chenango Forks, Glen Castle, Hinnmans Corners, Kattelville, and Nimmonsburg. The 2016 estimated population was 10,998, a 2.3% decrease from the 2010 Census (11,252).

Data from the 2016 U.S. Census American Community Survey estimates that 4.1% of the town population is five years of age or younger, and 17.3% is 65 years of age or older.

History and Cultural Resources

The town was first settled around 1787 and the Town of Chenango was established in 1791 before the formation of Broome County. It is one of the original towns of the county, from which other towns were later formed.

Growth/Development Trends

Table 9.5-1 summarizes major residential/commercial development that as of October 2018 and any known or anticipated major residential/commercial development and major infrastructure development that is likely to be



occur within the municipality in the next five years. Figure 9.5-1 of this annex illustrates the hazard areas along with the location of potential new development.

Table 9.5-1. Growth and Development

Property or Development Name	Type (e.g. Res., Comm.)	# of Units / Structures	Location (address and/or Parcel ID)	Known Hazard Zone(s)	Description/Status of Development
Recent Development from 2013 to present					
AutoZone Parts	Commercial	1	1365 Upper Front St ID 111.12-2-7	None	Complete
DMK Development	Commercial	1	1171 Upper Front St ID 111.20-1-12	None	Complete
Can Am West	2 story medical building	1	17 Chenango Bridge Rd ID 112.21-1-30.1	None	Complete
Known or Anticipated Development in the Next Five (5) Years					
Eli Clark	Single Family Residence	1	16 Aitchison Rd ID 110.12-1-29	None	Not started
David Warpus	Single family Residence	1	290 Poplar Hill Rd ID 095.12-1-34	None	Partially complete
Hoffman Development	Commercial carwash	1	1261 Upper Front St ID 111.16-1-34	None	Partially complete

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

9.5.3 Hazard Event History Specific to the Town of Chenango

Broome County has a history of natural events as detailed in Volume I, Section 5.0 of this plan. A summary of historical events is provided in each of the hazard profiles and includes a chronology of events that have affected the County and its municipalities. The Town of Chenango’s history of federally-declared (as presented by FEMA) and significant hazard events (as presented in NOAA-NCEI) is consistent with that of Broome County. Table 9.5-2 provides details regarding municipal-specific loss and damages the town experienced during hazard events. Information provided in the table below is based on reference material or local sources. For details of these and additional events, refer to Volume I, Section 5.0 of this plan.

Table 9.5-2. Hazard Event History

Dates of Event	Event Type (Disaster Declaration if applicable)	Broome County Designated?	Summary of Event	Municipal Summary of Damages and Losses
October 27 – November 8, 2012	Hurricane Sandy (EM-3351)	Yes	The remnants of Hurricane Sandy moved over the area bringing high winds and precipitation	Although the County was impacted, the town did not report damages.
June 26 – July 10, 2013	Severe Storms and Flooding (DR-4129)	Yes	The County was impacted by a series of severe storms and flash flood events.	The town had \$427,668.32 in FEMA declared projects which included 1 large project that was a slope failure – all infrastructure damage, included road closure
June 14, 2015	Flash Flood	No	warm front stalled across New York and northern Pennsylvania, providing the focus for repeating clusters of thunderstorms in the Finger Lakes and Southern Tier NY regions. A tropical-like airmass was in place allowing for a stripe of 2-4 inches of very heavy rain to fall in	Although the County was impacted, the town did not report damages.



Dates of Event	Event Type (Disaster Declaration if applicable)	Broome County Designated?	Summary of Event	Municipal Summary of Damages and Losses
			a narrow band extending from near Watkins Glen to areas north of Binghamton. Severe flash flooding was encountered with numerous roads and culverts destroyed by raging water.	
March 14-15, 2017	Severe Winter Storm and Snowstorm (DR-4322)	Yes	A record snowfall of between 25 and 35 inches of snow fell. Snowfall rates reached up to 5 inches per hour especially during the onset of the storm. The Greater Binghamton Airport broke an all-time daily snowfall record with 32.4 inches and a 2-day snowfall record of 34.9 inches.	The town had cleanup costs of \$41,676.66.
July 23-24, 2017	Flash Flood	No	Heavy rain producing thunderstorms developed during the late afternoon and evening hours as an upper level jet stream punched into the area. Widespread thunderstorms produced swaths of 3 to 4 inches of rain in just a few hours' time during the late evening and overnight hours. Rapid rises of area streams and creeks resulted in severe flash flooding.	Although the County was impacted, the town did not report damages.
August 2018	Severe Storms and Flooding (DR-4397)	Yes	A slow-moving storm tracked north from New Jersey to northern New York. This system triggered several rounds of heavy rain producing thunderstorms which caused severe flash flooding and major damages in several locations	Over 20 sites experienced damage during this event. Much of the damage included clogged culverts and ditches with debris, washed out culverts, and erosion. The town had an estimated \$194,000 in damages and repairs.

Notes:

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

9.5.4 Hazard Ranking and Jurisdiction-Specific Vulnerabilities

The hazard profiles in Section 5.0 (Risk Assessment) of this plan have detailed information regarding each plan participant’s vulnerability to the identified hazards. The following summarizes the hazards of greatest concern and risk to the Town of Chenango. For additional vulnerability information relevant to this jurisdiction, refer to Section 5.0.

Hazard Risk Ranking

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 of the plan. The ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property, and the economy as well as community capability and changing future climate conditions. This input supports the mitigation action development to target those hazards with highest level of concern.

As discussed in Section 5.3 (Hazard Ranking), each participating town or village may have differing degrees of risk exposure and vulnerability compared to Broome County as a whole. Therefore, each municipality ranked





the degree of risk to each hazard as it pertains to their community. The table below summarizes the hazard risk/vulnerability rankings of potential natural hazards for the Town of Chenango. The Town of Chenango has reviewed the County hazard risk/vulnerability risk ranking table as well as its individual results to reflect the relative risk of the hazards of concern to the community.

During the review of the hazard/vulnerability risk ranking, the town agreed with all of the following hazard rankings:

- The town changed the hazard ranking for earthquake from medium to low
- The town changed the hazard ranking for flood from low to high
- The town changed the hazard ranking for invasive species from low to medium. The town noted their concern over the spread of hogweed.
- The town changed the hazard ranking for wildfire from low to medium, noting that the wildfire risk increases during periods of drought and citing recent wildfire events.

Table 9.5-3. Town of Chenango Municipal Hazard Ranking Input

HAZARD	Drought	Earthquake	Extreme Temperature	Flood	Invasive Species	Severe Storm	Severe Winter Storm	Wildfire
RELATIVE RISK FACTOR	Medium	Low	Medium	High	Medium	Medium	Medium	Medium

Notes: The scale is based on the following hazard rankings as established in Section 5.3.
 High = Total hazard priority risk ranking score of 5 and above
 Medium = Total hazard priority risk ranking of 3.9 – 4.9
 Low = Total hazard risk ranking below 3.8

Critical Facilities Flood Risk

New York Department of Environmental Conservation (DEC) Statute 6 CRR-NY 502.4 sets forth floodplain management criteria for State projects located in flood hazard areas. The law states that no such projects related to critical facilities shall be undertaken in a Special Flood Hazard Area (SFHA) unless constructed according to specific mitigation specifications, including being raised 2’ above the Base Flood Elevation (BFE). This statute is outlined at <http://tinyurl.com/6-CRR-NY-502-4>. While all vulnerabilities should be assessed and documented, the State places a high priority on exposure to flooding. Critical facilities located in an SFHA, or having ever sustained previous flooding, must be protected to the 500-year flood event, or worst damage scenario. For those that do not meet this criteria, the jurisdiction must identify an action to achieve this level of protection (NYS DHSES 2017).

The table below identifies critical facilities in the community located in the 1-percent and 0.2-percent floodplain and presents Hazards United States (HAZUS) – Multi-Hazards (MH) estimates of the damage and loss of use to critical facilities as a result of a 1-percent annual chance flood event.

Table 9.5-4. Potential Flood Losses to Critical Facilities

Name	Type	Exposure		Potential Loss from 1% Flood Event		Addressed by Proposed Action
		1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	
BINGHAMTON CHRYSLER JEEP DODGE	Hazardous Materials		X	-	-	-
JAI RAVI INC	Hazardous Materials		X	-	-	-





Name	Type	Exposure		Potential Loss from 1% Flood Event		Addressed by Proposed Action
		1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	
MONRO MUFFLER #31	Hazardous Materials	X	X	-	-	-
MR TIRE #1321	Hazardous Materials	X	X	-	-	-
VALVOLINE LLC 020007	Hazardous Materials		X	-	-	-
Northgate WWTP	WWTP	X	X	-	-	T. Chenango-11
NORTHGATE WELL	Potable Well	X	X	1.69	-	T. Chenango-12
PENNVIEW WELL	Potable Well	X	X	0.85	-	T. Chenango-13
ROUTE 12A WELL	Potable Well	X	X	30	-	T. Chenango-14
Evergreen Apartment Homes	Mobile Home Park		X	-	-	-
Creature Comforts	Pet Store	X	X	0	0	-
Kattelville Athletic	Polling		X	-	-	-
Chenango Forks High School	Shelter	X	X	0	0	
Chenango Animal Hospital	Veterinarian	X	X	0	0	-

Source: HAZUS-MH v4.2

The Town of Chenango reviewed the list of critical facilities and determined that hazardous material facilities, day cares, pet stores, veterinarians, and polling locations were not critical for the purpose of essential services. As a result, the Town of Chenango did not develop mitigation actions to protect those facilities to the 500-year flood level.

Identified Issues

The municipality has identified the following vulnerabilities within their community:

- Single POE Roads that have historical damages: John Smith Rd, Willette Park Rd, Water St, Fox Rd, Kelly Rd, Parsons Rd.
- Single POE Roads that may be vulnerable to other hazards: All dead ends off of Front St and Kattelville Rd.
- Town of Chenango Complex has no backup power
- Previous reported areas of concern which include the Wallace Rd area.

Specific areas of concern based on resident response to the Broome County Hazard Mitigation Citizen survey include:

- Fuller Road
- Carmichael Road. and surrounding streets
- Kattelville Road. and surrounding streets
- Upper Front Street
- Areas of Morning Side Heights

9.5.5 Capability Assessment

This section identifies the following capabilities of the local jurisdiction:





- Planning and regulatory capability
- Administrative and technical capability
- Fiscal capability
- Community classification
- National Flood Insurance Program
- Integration of mitigation planning into existing and future planning mechanisms

Planning and Regulatory Capability

The table below summarizes the regulatory tools that are available to the Town of Chenango.

Table 9.5-5. Planning and Regulatory Tools

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
Planning Capability				
Comprehensive Plan	Yes, 2014	Local	Town Board	Comprehensive Plan
Capital Improvements Plan	No	-	-	-
Floodplain Management / Basin Plan	Yes	Local or Watershed	Ordinance	Chap. 39, 3/26/87
Stormwater Management Plan	Yes	Local	Ordinance	Chap. 57b, 5/7/07
Open Space Plan	No	-	-	-
Stream Corridor Management Plan	Yes	Local or Watershed	Ordinance	Chapter 57B & Chap. 39, 5/7/07
Watershed Management or Protection Plan	Yes	Local or Watershed	Ordinance	Chap 73-11, 7/18/83
Economic Development Plan	No	-	-	-
Comprehensive Emergency Management Plan	Yes, 6/13/07	Local or County	Broome County	Comprehensive Emergency Management Plan
Emergency Operation Plan	Yes, 6/13/07	Local or County	Town Board	Emergency Operation Plan
Post-Disaster Recovery Plan	Yes, 6/13/07	Local	Town Board	Post-Disaster Recovery Plan
Transportation Plan	No	-	-	-
Strategic Recovery Planning Report	No	-	-	-
Other Plans:	No	-	-	-
Regulatory Capability				
Building Code	Yes, 5/2/77	State & Local	Ordinance	Chap. 3
Zoning Ordinance	Yes, 1/7/78	Local	Ordinance	Chap. 73
Subdivision Ordinance	Yes, 2/3/86	State	Ordinance	Chap. 62
NFIP Flood Damage Prevention Ordinance	Yes, 3/26/87	Federal, State, Local	Ordinance	Chap. 39
NFIP: Cumulative Substantial Damages	Yes, 3/26/87	Federal, State, Local	Ordinance	Chap. 39
NFIP: Freeboard	Yes	State, Local	Ordinance	State mandated BFE+2 for all construction, both residential and non-residential
Growth Management Ordinances	Yes, 2/3/86	Local	Ordinance	Chap. 62



Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
Site Plan Review Requirements	Yes, 1/7/78	Local	Ordinance	Chap. 15-2 & Chap. 73-28
Stormwater Management Ordinance	Yes, 5/7/07	Local	Ordinance	Chap. 57b
Municipal Separate Storm Sewer System (MS4)	Yes	Local	Ordinance	2007
Natural Hazard Ordinance	No	-	-	-
Post-Disaster Recovery Ordinance	No	-	-	-
Real Estate Disclosure Requirement	Yes	State	NYS Department of State, Real Estate Agent	NYS mandate, Property Condition Disclosure Act, NY Code - Article 14 §460-467
Other (Special Purpose Ordinances [i.e., sensitive areas, steep slope])	Yes	Local or County	Ordinance	Chap. 35, 2/27/84 Chap. 36, 5/2/77 (Excavations)

Administrative and Technical Capability

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

Table 9.5-6. Administrative and Technical Capabilities

Resources	Is this in place? (Yes or No)	Department/ Agency/Position
Administrative Capability		
Planning Board	Yes	Ordinance
Mitigation Planning Committee	Yes	Inactive
Environmental Board/Commission	Yes	Ordinance
Open Space Board/Committee	No	-
Economic Development Commission/Committee	No	-
Maintenance programs to reduce risk	Yes	Highway Department
Mutual aid agreements	Yes	Highway Departments
Technical/Staffing Capability		
Planner(s) or engineer(s) with knowledge of land development and land management practices	Yes	Ordinance
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	Yes	Ordinance
Planners or engineers with an understanding of natural hazards	Yes	Ordinance/Highway
NFIP Floodplain Administrator (FPA)	Yes	Ordinance/Code Enforcement
Surveyor(s)	No	-
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	Yes	Ordinance – Beginning to work with applications
Scientist familiar with natural hazards	No	-
Warning systems/services	Yes	Reverse 911 calls through Broome County EOC



Resources	Is this in place? (Yes or No)	Department/ Agency/Position
Emergency Manager	No	-
Grant writer(s)	No	-
Staff with expertise or training in benefit/cost analysis	No	-
Professionals trained in conducting damage assessments	Yes	Code officials and Town Engineer

Fiscal Capability

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

Table 9.5-7. Fiscal Capabilities

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

Community Classifications

The table below summarizes classifications for community programs available to the Town of Chenango.

Table 9.5-8. Community Classifications

Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	Yes	9	2017
Building Code Effectiveness Grading Schedule (BCEGS)	NP	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	NP	-	-
NYSDEC Climate Smart Community	No	-	-
Storm Ready Certification	NP	-	-
Firewise Communities classification	NP	-	-
Natural disaster/safety programs in/for schools	No	-	-
Organizations with mitigation focus (advocacy group, non-government)	No	-	-



Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Public education program/outreach (through website, social media)	Yes	-	-
Public-private partnership initiatives addressing disaster-related issues	No	-	-
Other	No	-	-

Note:

- N/A Not applicable
- NP Not participating
- Unavailable

The classifications listed above relate to the community’s ability to provide effective services to lessen its vulnerability to the hazards identified. These classifications can be viewed as a gauge of the community’s capabilities in all phases of emergency management (preparedness, response, recovery and mitigation) and are used as an underwriting parameter for determining the costs of various forms of insurance. The CRS class applies to flood insurance while the BCEGS and Public Protection classifications apply to standard property insurance. CRS classifications range on a scale of 1 to 10 with class 1 being the best possible classification, and class 10 representing no classification benefit. Firewise classifications include a higher classification when the subject property is located beyond 1000 feet of a creditable fire hydrant and is within 5 road miles of a recognized Fire Station.

Criteria for classification credits are outlined in the following documents:

- The Community Rating System Coordinators Manual
- The Building Code Effectiveness Grading Schedule (<https://www.isomitigation.com/bcegs/>)
- The ISO Mitigation online ISO’s Public Protection website at <https://www.isomitigation.com/ppc/>
- New York State Climate Smart Communities (<http://www.dec.ny.gov/energy/56876.html>)
- The National Weather Service Storm Ready website at <https://www.weather.gov/stormready/communities>
- The National Firewise Communities website at <http://firewise.org/>

Self-Assessment of Capability

The table below provides an approximate measure of the Town of Chenango’s capability to work in a hazard-mitigation capacity and/or effectively implement hazard mitigation strategies to reduce hazard vulnerabilities.

Table 9.5-9. Self-Assessment Capability for the Municipality

Area	Degree of Hazard Mitigation Capability		
	Limited (If limited, what are your obstacles?)	Moderate	High
Planning and regulatory capability		X	
Administrative and technical capability	X – lack of staff and funding		
Fiscal capability			X
Community political capability		X	
Community resiliency capability			X
Capability to integrate mitigation into municipal processes and activities	X – lack of staff and funding		





National Flood Insurance Program

This section provides specific information on the management and regulation of the regulatory floodplain.

NFIP Floodplain Administrator (FPA)

Scott Russell, Assessor

National Flood Insurance Program (NFIP) Summary

The Town of Chenango does not currently maintain lists or inventories of properties that have been flood damaged. During recent flooding events, there has been limited damage to structures with very few sustaining severe damage. With damaged structures, the FPA does not conduct substantial damage estimates. At the time of this plan update, the town does not have residents or business owners interested in mitigation. The following table summarizes the NFIP statistics for the Town of Chenango.

Table 9.5-10. NFIP Summary

Municipality	# Policies	# Claims (Losses)	Total Loss Payments	# RL Properties	# SRL Properties	# Policies in the 1% Flood Boundary
Chenango (T)	111	81	\$1,977,608	9	0	32

Source: FEMA 2018

Notes: Policies, claims, repetitive loss, and severe repetitive loss statistics provided by FEMA Region 2, and current as of May 31, 2018. The total number of repetitive loss properties does not include severe repetitive loss properties

RL Repetitive Loss; SRL Severe Repetitive Loss

Resources

The FPA is the sole person who is responsible for floodplain administration duties in the Town of Chenango. Services provided to the community includes permit review and inspections. The Town of Chenango provides education and outreach programs to the community regarding flood hazards/risk, and flood risk reduction. This includes flyers, mailings, and website/social media postings. The FPA identified the following barriers to running an effective floodplain management program: financial, limited manpower, and long distances for training. At the time of this plan update, the FPA does not feel adequately supported or trained to fulfill their responsibilities as the municipal floodplain administrator and would consider attending training and/or certification training if offered.

The Town of Chenango is assisting in the update of flood plain (FIRM) maps at the Jurisdictional Level. Specific assistance is being provided by attending map update meetings held by FEMA, NYSDEC, and USGS; and by identifying flood-prone areas outside of currently designated flood areas.

Compliance History

The town continues to participate in the National Flood Insurance Program (NFIP) and in the Community Rating System (CRS) program. The town has a current CRS Rating of 9. The City maintains compliance with and good-standing in the NFIP through adoption and enforcement of floodplain management requirements (e.g. regulating all new and substantially improved construction in Special Hazard Flood Areas), floodplain identification and mapping, and flood insurance outreach to the community.

The most compliance audit (community assistance visit [CAV]) was conducted on July 2, 2013; however, the town is rescheduling per NYSDEC request.





Regulatory

Flood Damage Prevention Ordinance: The Town of Chenango Flood Damage Prevention Ordinance (Chapter 39 of the municipal code) was adopted to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by provisions designed to:

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

The Ordinance aims:

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

The Ordinance exceeds the minimum set by FEMA and New York State through the establishment of the following higher encroachment requirements:

- All proposed development in riverine situations where no flood elevation data is available (unnumbered A Zones) shall be analyzed to determine the effects on the flood-carrying capacity of the areas of special flood hazard set forth in § 39-12A(3). This may require the submission of additional technical data to assist in the determination.
- In all areas of special flood hazard in which base flood elevation data is available pursuant to § 39-12B or 39-13D(4) and no floodway has been determined, the cumulative effects of any proposed development, when combined with all other existing and anticipated development, shall not increase the water surface elevation of the base flood more than one foot at any point.
- In all areas of the special flood hazard where floodway data is provided or available pursuant to § 39-12B, the requirements of § 39-15, Floodways, shall apply.

The town has additional local laws that support floodplain management in the community as well. The Town of Chenango entered the CRS program on May 1, 2016 and is a Class 9 community, saving property owners in the SFHA and non-SFHA 5% on their flood insurance.



Integration of Hazard Mitigation into Existing and Future Planning Mechanisms

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day local government operations. As part of this planning effort, each community was surveyed to obtain a better understanding of their community's progress in plan integration. A summary is provided below. In addition, the community identified specific integration activities that will be incorporated into municipal procedures, which is also indicated below.

Planning

Existing Integration

Comprehensive Plan: The Comprehensive Plan for the Town of Chenango's Comprehensive Plan includes areas of natural hazard risk. The Plan refers to the Countywide Hazard Mitigation Plan. The Plan includes an Economic Development Plan.

Stormwater Management Plan: The Town of Chenango is an MS4 Regulated Community and has a formal Stormwater Management Plan. The Plan specifies projects/actions/initiatives to reduce the volume of stormwater, or otherwise mitigate stormwater flooding.

Emergency Plans: The Town of Chenango, at the governing board level, continues to periodically review and updated the Town Disaster Plan. Part of the ongoing updates to the Disaster Response Plan include the evaluation of alternative ingress/egress routes for critical town facilities to ensure access during flood events. The Highway Department facility and near local fire stations.

Broome County Hazard Mitigation Plan: The Town of Chenango will continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Section 7.0.

Post-Earthquake Disaster Planning: The town is developing a post-earthquake management plan to address building safety inspections, gas leaks, and other elements to protect public safety.

NYRCR Broome (March 2014): The Town of Chenango was included in the NY Rising Community Reconstruction Program (NYRCR) Plan for Broome County. The plan presented projects to increase resiliency in future flood events. During the HMP planning process, the village reviewed the list of projects included in the NYRCR Plan and identified projects they have completed (see Completed Mitigation Initiatives Not Identified in the Previous Mitigation Strategy) and are currently working on (see below). Projects not yet started are included in Table 9.5-12.

- The town is currently installing a backup generator with permanent fuel storage tank at the town hall
- Raising the electrical systems at Northgate Pump Station, McGirk's Sewer Lift Station, Route 12 Water Pump Station, and the Route 12A Sewer Lift Station above flood levels

The Town of Chenango has a Disaster Plan and Comprehensive Emergency Management Plan. The Emergency Management Plan does not refer to the HMP. The town does not have a Re-Development Plan, Growth Plan, Watershed or Stream Corridor Management Plan, Local Waterfront Revitalization Plan, Post-Disaster Recovery Plan, Post-Disaster Redevelopment Plan, Strategic Recovery Plan, resilience plan/strategy, or Climate Adaptation Plan/strategy.

Opportunities for Future Integration

Future updates to planning documents could refer to the Countywide Hazard Mitigation plan and include natural hazard risk.



Regulatory and Enforcement (Ordinances)

Existing Integration

Zoning Ordinance: The Town of Chenango Zoning Ordinance (Chapter 73 of the municipal code) was enacted for the purpose of promoting the health, safety, morals and general welfare of the community by lessening congestion in the streets; securing safety from fire, panic and other dangers; by providing adequate light and air; preventing the overcrowding of land; avoiding undue concentration of population; facilitating the adequate provision of transportation, water, school and other public requirements; and regulating the location and use of buildings, structures and land for trade, industry, residence and other purposes in accordance with a Comprehensive Plan.

Subdivision of Land Ordinance: The Town of Chenango Subdivision of Land Ordinance (Chapter 62 of the municipal code) establishes that a subdivision shall not be approved, and facilities shall not be accepted by the town unless the subdivider fully completes all necessary facilities so that the town's obligation is limited to maintenance of a completed facility and does not include any portion of its construction.

Storm Sewers: The Town of Chenango Storm Sewer ordinance (Chapter 57A of the municipal code) was adopted to provide for the health, safety, and general welfare of the citizens of the Town of Chenango through the regulation of non-stormwater discharges to the municipal separate storm sewer system (MS4) to the maximum extent practicable as required by federal and state law. This article establishes methods for controlling the introduction of pollutants into the MS4 in order to comply with requirements of the SPDES General Permit for Municipal Separate Storm Sewer Systems. The objectives of this article are:

- To meet the requirements of the SPDES General Permit for Stormwater Discharges from MS4s, Permit No. GP-02-02 or as amended or revised;
- To regulate the contribution of pollutants to the MS4 since such systems are not designed to accept, process or discharge non-stormwater wastes;
- To prohibit illicit connections, activities and discharges to the MS4;
- To establish legal authority to carry out all inspection, surveillance and monitoring procedures necessary to ensure compliance with this article; and
- To promote public awareness of the hazards involved in the improper discharge of trash, yard waste, lawn chemicals, pet waste, wastewater, grease, oil, petroleum products, cleaning products, paint products, hazardous waste, sediment and other pollutants into the MS4.

Stormwater Management and Erosion and Sediment Control: The Town of Chenango's Stormwater Management and Erosion and Sediment Control (Chapter 57B of the municipal code) was adopted to establish minimum stormwater management requirements and controls to protect and safeguard the general health, safety, and welfare of the public residing within this jurisdiction. This chapter seeks to meet those purposes by achieving the following objectives:

- Meet the requirements of Minimum Measures 4 and 5 of the SPDES General Permit for Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s), Permit No. GP-02-02 or as amended or revised;
- Require land development activities to conform to the substantive requirements of the New York State Department of Environmental Conservation State Pollutant Discharge Elimination System (SPDES) General Permit for Construction Activities GP-02-01 or as amended or revised;
- Minimize increases in stormwater runoff from land development activities in order to reduce flooding, siltation, increases in stream temperature, and stream bank erosion and maintain the integrity of stream channels;



- Minimize increases in pollution caused by stormwater runoff from land development activities which would otherwise degrade local water quality;
- Minimize the total annual volume of stormwater runoff which flows from any specific site during and following development to the maximum extent practicable; and
- Reduce stormwater runoff rates and volumes, soil erosion and nonpoint source pollution, wherever possible, through stormwater management practices and to ensure that these management practices are properly maintained and eliminate threats to public safety.

The Town of Chenango's municipal zoning, subdivision regulations, and site plan review process consider natural hazard risk and require developers to take additional actions to mitigate natural hazard risk. The Planning Board and ZBA ask for a Stormwater report for areas over an acre which the town engineer also reviews.

Opportunities for Future Integration

If the town updates any ordinances or regulations, the town will consider including information on natural hazards.

Operational and Administration

Existing Integration

Planning Board: The Planning Board of Chenango consists of five members with a five-year term of office. The Board meets on the second Monday of each month at 7:00 p.m. in the Town Hall. The Planning Board is established by Chapter 15 of the municipal code. The Planning Board requires adherence to local, state and federal regulations to manage natural hazard risk.

Zoning Board: The Zoning Board of Chenango consist of five members with a five-year term of office. Board meets on the fourth Tuesday of each month at 7:00 p.m. in the Town Hall. The Zoning Board requires adherence to local, state and federal regulations to manage natural hazard risk.

Environmental Review Board: The Environmental Review Board meets as required at the Town Hall and is made up of a Chairman and two Board members.

Stormwater Maintenance: The town will continue to clean and maintain the detention pond and discharge swale from the ponds above Clarendon Drive. The town also continues to annually inspect all town culverts for signs of erosion or blockage. The Highway Superintendent reviews culverts and schedules appropriate maintenance as needed.

National Incident Management System (NIMS): The town conducts training in the National Incident Command System (ICS), under the National Incident Management System (NIMS).

Vegetation Management: The Town of Chenango continues to review trees and branches on an annual basis. They continue to work with NYSEG to top trees and hire contractors to remove other trees on an as needed basis.

Residential Elevations: The town continues to work with homeowners in the Broad Acres, Front Street, and Chenango Bridge Areas of the town to elevate residential structures out of the floodplain should they wish to elevate their home.

Mutual Aid Agreements: The Town of Chenango works to create/enhance/ maintain mutual aid agreements with neighboring communities for continuity of operations.



Structure/Facility Inventories/Datasets: The Town of Chenango participates in regional, county and/or state level projects and programs to develop improved structure and facility inventories and hazard datasets to support enhanced risk assessment efforts. Such programs may include developing a detailed inventory of critical facilities based upon FEMA's Comprehensive Data Management System (CDMS) which could be used for various planning and emergency management purposes including:

- Support the performance of enhanced risk and vulnerability assessments for hazards including flooding, earthquake, wind, and land failure.
- Support state, county and local planning efforts including mitigation (including updates to the State HMP), comprehensive emergency management, debris management, and land use.

Critical Facilities Assessment: The Town of Chenango continues to train personnel and conduct rapid screening of critical facilities for earthquake vulnerability.

The Town of Chenango does not have a municipal planner or contract planning firm. Stormwater Management functions are performed by the Stormwater Manger/Assessor. NFIP Floodplain Management functions are performed by the Floodplain Manager/Assessor. The town contracts with engineering firms that have experience with developing Benefit-Cost Analysis. The Assessor and Code Enforcement Officer can perform Substantial Damage Estimates. Town staff receive training/continuing professional education which supports natural hazard risk reduction. No staff have job descriptions that specifically include identifying and/or implementing mitigation projects/actions or other efforts to reduce natural hazard risk and no staff or Departments participate in associations, organizations, groups or other committees that support natural hazard risk reduction and build hazard management capabilities. The Highway Department conducts annual catch basin and outfall review.

Opportunities for Future Integration

The town could hire staff or contract with firms that have experience in preparing grant applications for mitigation projects.

Funding

Existing Integration

The municipal/operating budget includes line items for drainage projects. The town does not have a Capital Improvements Budget. The town has previously been awarded FEMA mitigation grants with no local match. The town does not have any other mechanisms to fiscally support hazard mitigation projects.

Opportunities for Future Integration

The town could continue to could continue to apply for grant funding to support hazard mitigation projects.

Education and Outreach

Existing Integration

The Town of Chenango participates in the CRS program and hosts displays in the main entranceway for NFIP and flooding issues. The town operates a municipal website (<http://townofchenango.com/>). The website includes a flood recovery information page and a stormwater management page. The Town of Chenango conducts and facilitates community and public education and outreach for residents and businesses to include, but is not to be limited to, the following to promote and effect natural hazard risk reduction:

- Provide and maintain links to the HMP website, and regularly post notices on the County/municipal homepage(s) referencing the HMP webpages.



- Prepare and distribute informational letters to flood vulnerable property owners and neighborhood associations, explaining the availability of mitigation grant funding to mitigate their properties, and instructing them on how they can learn more and implement mitigation.
- Use email notification systems and newsletters to better educate the public on flood insurance, the availability of mitigation grant funding, and personal natural hazard risk reduction measures.
- Work with neighborhood associations, civic and business groups to disseminate information on flood insurance and the availability of mitigation grant funding

Opportunities for Future Integration

The county-wide website development will have links to individual townships.

Sheltering, Evacuation, and Temporary Housing

Temporary housing, evacuation routes, and sheltering measures must be in place and available for public awareness to protect residents, mitigate risk, and relocate residents, if necessary, to maintain post-disaster social and economic stability.

Refer to Section 4.6.5 of Volume 1 of this plan for a description of resources identified by the county to support municipalities with the identification of evacuation, sheltering, and temporary and permanent housing.

Temporary and Long-Term Housing

At the time of this plan update, the Town of Chenango does not have potential sites for the placement of temporary housing for residents displaced by a disaster. Nor do they have any potential sites suitable for relocating houses out of the floodplain and/or building new homes once properties in the floodplain are acquired.

Evacuation and Sheltering Needs

The Town of Chenango identified the following potential locations suitable for shelters in the community:

- Chenango Bridge Fire Co., located at 17 Kattelville Road, has a capacity of 50 people and can accommodate special needs population and service animals. The building is ADA compliant, has backup power, and can provide basic first aid services.
- Valley Christian Reformed Church, located at 142 River Road, has a capacity of 50 people and can accommodate pets. It is ADA compliant but does not have backup power nor can they provide medical services.
- Chenango Fire Station #1 and #2, located at 86 and 1045 Castle Creek Road, is ADA compliant. It also has backup power and can provide basic first aid services.
- Chenango Forks Fire Station, located at 2640 NYS Route 12, can hold 140 people; however, it cannot accommodate pets. The facility is ADA compliant and has backup power. The facility can also provide basic first aid.

Evacuation routes in the Town of Chenango are the responsibility of the first responders – Chenango Fire Company, Chenango Bridge Fire Company, and the Chenango Forks Fire Company. The main routes to evacuation would be NYS Route 12, Interstate 81, NYS Route 12A, and Route 188.

9.5.6 Mitigation Strategy and Prioritization

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



Past Mitigation Initiative Status

The following table indicates progress on the community’s mitigation strategy identified in the 2013 Plan. Actions that are carried forward as part of this plan update are included in the following subsection in its own table with prioritization. Previous actions that are now on-going programs and capabilities are indicated as such in the following table and may also be found under ‘Capability Assessment’ presented previously in this annex.



Table 9.5-11. Status of Previous Mitigation Actions

Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2019 HMP or Discontinue 2. If including action in the 2019 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
						Cost	Level of Protection	
1	Wallace Road storm sewer installation - A storm sewer system will be installed connecting the upper portion of Wallace Rd with the State's storm system on US Route 11. Several catch basins will also be installed along the system. This storm system will alleviate flooding from the unnamed creek that flows between Wallace Rd and Smith Hill Rd. Numerous homes have been flooded both during the 2006 flood and the 2011 flood. This will help protect the same homes from repetitive flooding.	Flood		Town of Chenango; BC Highway, NYS DOT	In Progress	Cost	\$3.2 million	1. Include in 2019 HMP 2. This project was initially selected to be completed via the NYS Rising Program. The project was bid but the costs exceeded the initial estimate by \$2 million dollars making the project economically infeasible which prohibited it from moving from the planning to construction. 3.
						Level of Protection		
						Damages Avoided; Evidence of Success	None	
2	Detention pond cleanup and discharge swale from the ponds above Clarendon Drive.	Flood		Town of Chenango (Highway dept)	Complete	Cost	\$16,500	1. Discontinue 2. 3. Ongoing capability
						Level of Protection		
						Damages Avoided; Evidence of Success		
3	Trash rack construction - A trash rack in the wooded area above Wallace Rd. It will collect storm debris from entering the residential section of the creek and creating a dam there. Several homes will be protected from repetitive flood damage.	Flood		Town of Chenango Highway	No Progress	Cost		1. Discontinue 2. 3. The ability to maintain this was not feasible.
						Level of Protection		
						Damages Avoided; Evidence of Success		



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2019 HMP or Discontinue 2. If including action in the 2019 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
						Cost	Level of Protection	
4	Chenango Bridge Pump station feasibility study	Flood		Town of Chenango DPW	In Progress	Cost	\$200,000	1. Include in 2019 HMP 2. To protect from river flooding 3. Prevent electrical failure
						Level of Protection		
						Damages Avoided; Evidence of Success	Flood protected	
5*	Periodically review and update Town Disaster Plan.	All		Town of Chenango Town Board	Ongoing Capability	Cost		1. Discontinue 2. We are periodically reviewing this on the governing board level. 3. Ongoing capability
						Level of Protection		
						Damages Avoided; Evidence of Success		
6*	Create and maintain a command center for disaster response at Town Hall. Center will have dedicated communications, backup power, and all necessary support services.	All		Town of Chenango Town Board	In Progress	Cost		1. Include in 2019 HMP 2. In lieu of using NY Rising Money for project #1 the remaining funds are being used to pursue the purchase of a generator to power the Town Hall. 3.
						Level of Protection		
						Damages Avoided; Evidence of Success		
7*	As part of ongoing update to town Disaster Response Plan, evaluate alternative ingress/egress routes for critical town facilities to ensure access during flood events.	Flood		Town of Chenango Highway Dept , Broome County DPW, NYS DOT	Ongoing Capability	Cost		1. Discontinue 2. Known flooding areas are known to the Highway Department and local fire stations for detours and closings. 3. Ongoing capability
						Level of Protection		
						Damages Avoided; Evidence of Success		
8*	Continue training in the National Incident Command System (ICS), under the National Incident Management System (NIMS).	All		Town of Chenango Highway DPW, Town Board FEMA	Ongoing Capability	Cost		1. Discontinue 2. 3. Ongoing capability
						Level of Protection		
						Damages Avoided; Evidence of Success		
9*	Prepare and make available a simple pamphlet detailing pertinent information for new residents or anyone	All		Town of Chenango Hazard Mitigation Chair	No Progress	Cost		1. Include in 2019 HMP 2. Review as a part of CRS 3.
						Level of Protection		
						Damages Avoided;		



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2019 HMP or Discontinue 2. If including action in the 2019 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
						Cost	Level of Protection	
	interested in learning more about natural hazards that may affect Town residents.					Evidence of Success		
10*	Hold public information meetings, as appropriate, to educate the public on potential hazards and impacts.	All		Town of Chenango Town Board	No Progress	Cost		1. Discontinue
						Level of Protection		2.
						Damages Avoided; Evidence of Success		3. Ongoing capability
11	Pursue various options to purchase a generator to maintain power to the town hall and to maintain radio contact and operability in the event of a long-term power outage.	All		Town of Chenango Town Board	Ongoing Capability	Cost		1. Discontinue
						Level of Protection		2.
						Damages Avoided; Evidence of Success		3. This is part of making the Town Hall a disaster center.
12	Assist in the update of flood plain (FIRM) maps – Jurisdictional Level. Specific assistance can be provided in the area of attending map update meetings held by FEMA, NYSDEC and USGS; and identification of flood-prone areas outside of currently designated areas	Flood		FEMA, Town of Chenango Ordinance Dept and Planning Board	Ongoing Capability	Cost		1. Discontinue
						Level of Protection		2.
						Damages Avoided; Evidence of Success		3. Ongoing capability
13*	Continue participation in the National Flood Insurance Program (NFIP) and begin process of joining CRS.	Flood		FEMA, Town of Chenango Town Board	Complete	Cost		1. Discontinue
						Level of Protection		2. The town has joined the CRS and has a current rating of 9.
						Damages Avoided; Evidence of Success		3. Ongoing capability
14	Annually inspect all town culverts for signs of erosion or blockage.	Flood		Town of Chenango Highway Dept	Ongoing Capability	Cost		1. Discontinue
						Level of Protection		2. The Highway Superintendent reviews culverts on a regular basis and schedules them to be replaced as needed.



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2019 HMP or Discontinue 2. If including action in the 2019 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
						Cost	Level of Protection	
	Pipe/culvert replacement on an as needed basis.					Damages Avoided; Evidence of Success		3. Ongoing capability
15	Chenango will continue to identify drainage system enhancement needs through its capital facilities program. Grants will be pursued for those capital projects that meet federal/state grant eligibility requirements.	Flood		Town of Chenango Highway Dept	No Progress	Cost		1. Discontinue
						Level of Protection		2.
						Damages Avoided; Evidence of Success		3. We do not have a capital facilities program
16*	Continue to review trees and branches on an annual basis. Continue to work with NYSEG to top trees and hire contractors to remove other trees on an as needed basis.	Severe Storm		Town of Chenango Highway Dept NYSEG	Ongoing Capability	Cost		1. Discontinue
						Level of Protection		2. The Highway Superintendent does this in the normal course of his duties.
						Damages Avoided; Evidence of Success		3. Ongoing capability
17	Structural elevations for private residences in the Broad Acres, Front Street, and Chenango Bridge areas of Chenango	Flooding		Town of Chenango Town Board	Ongoing Capability	Cost		1. Discontinue
						Level of Protection		2. This would be accomplished if a homeowner wished to make modifications.
						Damages Avoided; Evidence of Success		3. Ongoing capability
Flood-1	Purchase, relocate, or elevate structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority. Broad Acres, Front Street, and Chenango Bridge areas and Route 12. (look at alternatives to flood proof).	Flood		Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from BCPD, NYSOEM, FEMA	No Progress	Cost		1. Include in 2019 HMP
						Level of Protection		2.
						Damages Avoided; Evidence of Success		3.



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps
	Phase 1: Identify appropriate candidates for relocation or elevation based on cost-effectiveness versus retrofitting. Phase 2: Where relocation is determined to be a viable option, work with property owners toward implementation of that action based on available funding from FEMA and local match availability.							<ol style="list-style-type: none"> Project to be included in 2019 HMP or Discontinue If including action in the 2019 HMP, revise/reword to be more specific (as appropriate). If discontinue, explain why.
Flood-2*	Maintain compliance with and good-standing in the NFIP including adoption and enforcement of floodplain management requirements (e.g. regulating all new and substantially improved construction in Special Hazard Flood Areas), floodplain identification and mapping, and flood insurance outreach to the community. Further, continue to meet and/or exceed the minimum NFIP standards and criteria through the following NFIP-related continued compliance actions identified as Initiatives below.	Flood		Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	Ongoing Capability	Cost		<ol style="list-style-type: none"> Discontinue This is completed with current town ordinances. Ongoing capability
Flood-3*	Conduct and facilitate community and public education and outreach for residents and	Flood		Municipality with support from Planning Partners,	Ongoing Capability	Cost		<ol style="list-style-type: none"> Discontinue The town participates in the CRS program which requires an annual mailing to residents and lenders/insurance agents. The town also has



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps
	<p>businesses to include, but not be limited to, the following to promote and effect natural hazard risk reduction:</p> <ul style="list-style-type: none"> • Provide and maintain links to the HMP website, and regularly post notices on the County/municipal homepage(s) referencing the HMP webpages. • Prepare and distribute informational letters to flood vulnerable property owners and neighborhood associations, explaining the availability of mitigation grant funding to mitigate their properties, and instructing them on how they can learn more and implement mitigation. • Use email notification systems and newsletters to better educate the public on flood insurance, the availability of mitigation grant funding, and personal natural hazard risk reduction measures. Work with neighborhood associations, civic and business groups to disseminate information on flood insurance and the availability of mitigation grant funding. 			BCPD, NYSOEM, FEMA				<ol style="list-style-type: none"> 1. Project to be included in 2019 HMP or Discontinue 2. If including action in the 2019 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why. <p>informational brochures in the main foyer as well as a dedicated webpage.</p>
						Damages Avoided; Evidence of Success		<ol style="list-style-type: none"> 3. Ongoing capability
Flood-4*		Flood				Cost		<ol style="list-style-type: none"> 1. Discontinue



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2019 HMP or Discontinue 2. If including action in the 2019 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
						Level of Protection	Damages Avoided; Evidence of Success	
	Obtain and archive elevation certificates			NFIP Floodplain Administrator	Ongoing Capability	Level of Protection		2. This is done in the normal course of duties for the Ordinance Department 3. Ongoing capability
Flood-5	Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Section 7.0	Flood		Municipality with support from Planning Partners, BCPD, NYSOEM, FEMA	Ongoing Capability	Cost Level of Protection Damages Avoided; Evidence of Success		1. Discontinue 2. 3. Ongoing capability
Flood-6*	Complete ongoing updates of Comprehensive Emergency Management Plans	Flood		Municipality with support from NYSOEM	No Progress	Cost Level of Protection Damages Avoided; Evidence of Success		1. Discontinue 2. The town has a disaster plan. 3. Ongoing capability
Flood-7*	Create/Enhance/Maintain Mutual Aid agreements with neighboring communities for continuity of operations	All Hazards		Municipality with support from County, NYSOEM, FEMA and surrounding communities	Ongoing Capability	Cost Level of Protection Damages Avoided; Evidence of Success		1. Discontinue 2. The town has agreements in place with Broome County and other adjoining townships. 3. Ongoing capability
Flood-8	Identify and develop agreements with entities that can provide support with FEMA/SOEM paperwork after disasters; qualified damage assessment personnel – Improve post-disaster capabilities – damage assessment; FEMA/SOEM paperwork compilation, submissions, record-keeping	Flood		Municipality with support from County, NYSOEM and FEMA	No Progress	Cost Level of Protection Damages Avoided; Evidence of Success		1. Include in 2019 HMP 2. 3.
Flood-9*		Flood				Cost		1. Include in 2019 HMP



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2019 HMP or Discontinue 2. If including action in the 2019 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
						Level of Protection	Damages Avoided; Evidence of Success	
	Work with regional agencies (i.e. County and SOEM) to help develop damage assessment capabilities at the local level through such things as training programs, certification of qualified individuals (e.g. code officials, floodplain managers, engineers).			Municipality with support from County, NYSOEM and FEMA	No Progress			2. 3.
Flood-10*	Participate in local, county and/or state level projects and programs to develop improved structure and facility inventories and hazard datasets to support enhanced risk assessment efforts. Such programs may include developing a detailed inventory of critical facilities based upon FEMA's Comprehensive Data Management System (CDMS) which could be used for various planning and emergency management purposes including: <ul style="list-style-type: none"> Support the performance of enhanced risk and vulnerability assessments for hazards of concern. Support state, county and local planning efforts including mitigation (including updates to the State HMP), comprehensive 	Flood		Hazard Mitigation Plan Coordinator	In Progress	Cost		1. Discontinue 2. Personnel attend scheduled meetings for hazards and disasters as provided on the county level. 3. Ongoing capability
						Level of Protection		
						Damages Avoided; Evidence of Success		



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps
	<p>emergency management, debris management, and land use.</p> <p>Improved structural and facility inventories could incorporate flood, wind and seismic-specific parameters (e.g. first floor elevations, roof types, structure types based on FEMA-154 "Rapid Visual Screening of Buildings for Potential Seismic Hazards" methodologies). It is recognized that these programs will need to be initiated and supported at the County and/or State level, and will require training, tools and funding provided at the county, state and/or federal level.</p>							<ol style="list-style-type: none"> Project to be included in 2019 HMP or Discontinue If including action in the 2019 HMP, revise/reword to be more specific (as appropriate). If discontinue, explain why.
Severe Storm-1	<p>Enhance the County/community resilience to severe storms (incl. severe winter storms) by joining the NOAA "Storm Ready" program and supporting communities in joining the program. "StormReady" communities are better prepared to save lives from the onslaught of severe weather through advanced planning, education and awareness. Participation in the NOAA "StormReady" program shall include</p>	Severe Storm		Municipality with support from County, NYSOEM and FEMA	No Progress	Cost		<ol style="list-style-type: none"> Discontinue The town does not have the personnel or ability to meet the requirements.
						Level of Protection		
						Damages Avoided; Evidence of Success		



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing, No Progress, Complete)	Evaluation of Success (if project status is complete)	Next Steps						
	providing information on the "StormReady" program, facilitating public outreach and awareness programs, and supporting community storm risk reduction activities as appropriate. Specific actions addressed by "StormReady" participation include establishing a 24-hour Warning Point, increase number of ways EOC receives NWS warnings, increase number of ways to disseminate warnings, monitoring hydrometeorological data, providing annual weather safety talks, train weather spotters, create a formal hazardous weather plan, host annual visits by NWS to communities, etc.						<ol style="list-style-type: none"> Project to be included in 2019 HMP or Discontinue If including action in the 2019 HMP, revise/reword to be more specific (as appropriate). If discontinue, explain why. 						
Earthquake-1	Obtain training and conduct rapid screening assessment of critical facilities for earthquake vulnerability.	Earthquake		Municipal Emergency Management, Fire, PD with support from County, NYSOEM	Ongoing Capability	<table border="1"> <tr><td>Cost</td><td></td></tr> <tr><td>Level of Protection</td><td></td></tr> <tr><td>Damages Avoided; Evidence of Success</td><td></td></tr> </table>	Cost		Level of Protection		Damages Avoided; Evidence of Success		<ol style="list-style-type: none"> Discontinue Ongoing capability
Cost													
Level of Protection													
Damages Avoided; Evidence of Success													
Earthquake-2*	Develop a post-earthquake management plan to address building safety inspections, gas leaks, and other elements to protect public safety.	Earthquake		Municipal Emergency Management, Fire, PD with support from County, NYSOEM	Ongoing Capability	<table border="1"> <tr><td>Cost</td><td></td></tr> <tr><td>Level of Protection</td><td></td></tr> <tr><td>Damages Avoided; Evidence of Success</td><td></td></tr> </table>	Cost		Level of Protection		Damages Avoided; Evidence of Success		<ol style="list-style-type: none"> Discontinue Ongoing capability
Cost													
Level of Protection													
Damages Avoided; Evidence of Success													



Completed Mitigation Initiatives Not Identified in the Previous Mitigation Strategy

The Town of Chenango has identified the following mitigation projects/activities that have also been completed but were not identified in the previous mitigation strategy in the 2013 Plan:

- Northgate Water Pump Station Upgrades – this project was identified in the Town of Chenango NY Rising Community Reconstruction Plan; it is currently in design phase. The proposed project includes raising the electrical systems at Northgate Pump station above flood levels.
- The Town of Chenango was included in the NY Rising Community Reconstruction Program (NYRCR) plan for Broome County in March 2014. During the NY Rising process, the village identified mitigation projects that would make the village more resilient to future storms. During the plan update process, the town identified the following completed projects:
 - The town conducted a comprehensive analysis of the Smith Hill Creek stormwater management system.
 - The town removed approximately 200 linear feet of stormwater pipe and replaced it with a three-foot pipe with access for cleaning approximately midway along the pipe
- **Building Resiliency (2016):** The Broome County Department of Planning prepared *Building Resiliency* to document resiliency projects municipalities have completed. The Town of Chenango identified the following completed projects (as of 2016):
 - Installation of a storm sewer system with catch basins to alleviate flooding from the nearby creek in the area of Wallace Road and Smith Road.
 - Completed the CRS application for continued participation

Proposed Hazard Mitigation Initiatives for the Plan Update

The Town of Chenango participated in a mitigation action workshop on October 17, 2018 and was provided the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 ‘Selecting Appropriate Mitigation Measures for Floodprone Structures’ (March 2007) and FEMA ‘Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards’ (January 2013).

Table 9.5-12 summarizes the comprehensive-range of specific mitigation initiatives the Town of Chenango would like to pursue in the future to reduce the effects of hazards. Some of these initiatives may be previous actions carried forward for this plan update. These initiatives are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. Both the four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

As discussed in Section 6, 14 evaluation/prioritization criteria are used to complete the prioritization of mitigation initiatives. For each new mitigation action, a numeric rank is assigned (-1, 0, or 1) for each of the 14 evaluation criteria to assist with prioritizing your actions as ‘High’, ‘Medium’, or ‘Low.’ The table below summarizes the evaluation of each mitigation initiative, listed by Action Number.

Table 9.5-13 provides a summary of the prioritization of all proposed mitigation initiatives for the Plan update.



Table 9.5-12. Proposed Hazard Mitigation Initiatives

Project Number	Project Name	Description of Problem and Solution	Hazard(s) to be Mitigated	Goals Met	Critical Facility (Yes/No)	Environmental and Historic Preservation (EHP) Issues	Lead and Support Agencies	Estimated Costs	Estimated Benefits	Estimated Timeline	Potential Funding Sources	Priority	Mitigation Category	CRS Category
T. Chenango-1	Frederick Road Stormwater Upgrades	<p>Problem: Frederick Road is prone to flooding, resulting in road closures and possible damages to properties. The town is completing a hydrologic analysis of Frederick Road.</p> <p>Solution: The completion of the hydrologic study will allow for engineering and construction to be conducted to address the flooding issues. Likely construction may include culvert and Stormwater upgrades.</p>	Flood, Severe Storm	5	No	None	Town Engineer, Highway Department	\$2.5 million	Reduction in flooding frequency and intensity in area surrounding Frederick Road	5 years	HMGP, CDBG	High	SIP	SP
T. Chenango-2	Town-wide Stream Maintenance Education Program	<p>Problem: There is currently no formal public education and outreach program to inform residents on proper stream management practices, permitting processes, or which agencies to talk with when there are questions. A town-wide program is needed to alleviate this problem. Considerable town resources are devoted to answering public inquiries on this subject.</p> <p>Solution: The town will develop public outreach materials to educate residents about stream management, which agencies have jurisdiction, and stream cleanup after flash flood events. Outreach materials will include development of a flyer, website postings, etc. The town will work with appropriate county and state agencies (SWCD, Broome-Tioga Stormwater, NYS DEC) to help to develop and support outreach.</p>	Flood, Severe Storm	1, 2	No	None	Town Highway Department with support from County SWCD	\$2,000	Educated public. Less staff time dedicated to public responses and inquiries after flooding events.	18 months	Municipal budget, support from County SWCD, Broome-Tioga Stormwater, NYS DEC	High	EAP	PI



Project Number	Project Name	Description of Problem and Solution	Hazard(s) to be Mitigated	Goals Met	Critical Facility (Yes/No)	Environmental and Historic Preservation (EHP) Issues	Lead and Support Agencies	Estimated Costs	Estimated Benefits	Estimated Timeline	Potential Funding Sources	Priority	Mitigation Category	CRS Category
T. Chenango-3	Grant Road Drainage	<p>Problem: The area of Grant Road and Booth Road repeatedly floods, impacting one home. The structure is not in the 100 year floodplain but has been damaged and require evacuations several times. While work has been done in this area, replacement of the large culvert drainage pipe twice, it has not been effective, and this area is still prone to flooding and damages. The cost of replacement of the pipe was \$55,000 each time.</p> <p>Solution: The town will buyout and demolish the impacted property, preventing future damages and lowering the need for municipal response.</p>	Flood, Severe Storm	5	No	None	Town Supervisor with support from the homeowners	\$46,000	Property will no longer be damaged in flooding events and required municipal response to flooding will be reduced.	1 year	FEMA FMA, PDM	High	SIP	SP
T. Chenango-4 (former 1)	Smith Hill Creek (Wallace Road) Stormwater Management System	<p>Problem: Stormwater system needs upgrades. Numerous homes have been flooded both during the 2006 flood and the 2011 flood Currently replacing pipes.</p> <p>Solution: A storm sewer system will be installed connecting the upper portion of Wallace Rd with the State's storm system on US Route 11. Several catch basins will also be installed along the system. This storm system will alleviate flooding from the unnamed creek that flows between Wallace Rd and Smith Hill Rd.</p>	Flood, Severe Storm	1, 5	No	Permitting possible if Creek involved	Town of Chenango DPW; BC Highway, NYS DOT	\$3.2 million (\$3 million)	Drainage improvements will reduce Stormwater flooding.	Within 5 years	Town Budget, HMGP	High	SIP, NSP	PP, NR
T. Chenango-5	Northgate Plaza Flap Gate	<p>Problem: Flap gate necessary to prevent backflow. The property is privately owned, and the Town does not have jurisdiction to complete the project.</p>	Flood, Severe Storm	1, 5	No	None	DPW	\$355,000	Private property owner provided with	With 1 year	Town budget	Medium	EAP	PI



Project Number	Project Name	Description of Problem and Solution	Hazard(s) to be Mitigated	Goals Met	Critical Facility (Yes/No)	Environmental and Historic Preservation (EHP) Issues	Lead and Support Agencies	Estimated Costs	Estimated Benefits	Estimated Timeline	Potential Funding Sources	Priority	Mitigation Category	CRS Category
		Solution: Install flap gates and replace pipes in the stormwater management system beneath Northgate Plaza. Construct retention wall between Weis Market site and Waste Water Treatment Plant							mitigation options					
T. Chenango-6	Town Hall Backup Generator	Problem: Town Hall lacks a backup generator Solution: The town will install a backup generator with permanent fuel storage tank at the town hall to ensure provision of essential services and provide support for all aspects of municipal functionality during a disaster.	All hazards	4	Yes	None	Town Supervisor	\$225,000	Town Hall maintains power during hazard events, allowing continued critical function.	Within 1 year	PDM, HMGP, NY Rising	High	SIP	PP, ES
T. Chenango-7 (former 6)	Create and maintain a command center for disaster response at Town Hall.	Problem: Town needs a disaster command center capable of housing first responders Solution: Center will have dedicated communications, backup power, and all necessary support services. Upon completion, the town will consider joining the Storm Ready Program	All	4	Yes	None	Town of Chenango Town Board	\$20,000	Protected central location for disaster response.	Within 5 years	HMGP	Medium	SIP	ES
T. Chenango-8 (former 9)	Natural Hazard Education Program	Problem: Residents need more education on natural hazards Solution: Pamphlet about natural hazards will be made available. Pamphlet will be reviewed as part of CRS.	All	1, 2	No	None	Town of Chenango Hazard Mitigation Chair	\$2,000	Residents better educated and informed about natural hazards. CRS points available.	Within 2 years	Municipal budget	Medium	EAP	PI
T. Chenango-9 (former Flood 1)	Purchase, relocate, or elevate structures located in	Problem: Broad Acres, Front Street, and Chenango Bridge areas and Route 12. (look at alternatives to flood proof).	All	1	No	None	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support	Costs are dependent on number of properties.	RL/SRL protected from hazards or removed from hazard zones.	Within 3 years	FEMA HMGP or FMA with homeowner local match	High	SIP	PP



Project Number	Project Name	Description of Problem and Solution	Hazard(s) to be Mitigated	Goals Met	Critical Facility (Yes/No)	Environmental and Historic Preservation (EHP) Issues	Lead and Support Agencies	Estimated Costs	Estimated Benefits	Estimated Timeline	Potential Funding Sources	Priority	Mitigation Category	CRS Category
	hazard-prone areas	Solution: Phase 1: Identify appropriate candidates for relocation or elevation based on cost-effectiveness versus retrofitting. Phase 2: Where relocation is determined to be a viable option, work with property owners toward implementation of that action based on available funding from FEMA and local match					from BCPD, NYSOEM, FEMA							
T. Chenango-10 (former Flood 8)	Improve post-disaster capabilities	Problem: The town lacks post-disaster procedures for assessments and various FEMA paperwork Solution: Identify and develop agreements with entities that can provide support with FEMA/SOEM paperwork after disasters; qualified damage assessment personnel – Improve post-disaster capabilities – damage assessment; FEMA/SOEM paperwork compilation, submissions, record-keeping	Flood	2, 3, 4	No	None	Town of Chenango Hazard Mitigation Chair	Normal staff salaries	Town staff better prepared to deal with post-disaster actions.	Within 1 year	Municipal budget	Medium	LPR	ES
T. Chenango-11	Protect the Northgate Waste Water Treatment Plant to the 500 year flood level	Problem: The facility is in the 100 year floodplain. Solution: The town will elevate electrical components.	Flood	1, 3, 5	Yes ●	None	Town Engineer		Provide outreach to the property owner and informing them of potential flood damage and possible solutions	Within 5 years dependent on funding	Municipal budget	Medium	SIP, EAP	PP, PI
T. Chenango-12	Protect the Northgate Well to the 500 year flood level	Problem: The facility is in the 100 year floodplain. Solution: The town will elevate electrical components.	Flood	1, 3, 5	Yes ●	None	Town, facilities manager		The Well will be protected to the 500 year flood level.		HMGP	High	SIP	PP



Project Number	Project Name	Description of Problem and Solution	Hazard(s) to be Mitigated	Goals Met	Critical Facility (Yes/No)	Environmental and Historic Preservation (EHP) Issues	Lead and Support Agencies	Estimated Costs	Estimated Benefits	Estimated Timeline	Potential Funding Sources	Priority	Mitigation Category	CRS Category
T. Chenango-13	Protect the Pennview Well to the 500 year flood level	Problem: The facility is in the 100 year floodplain.	Flood	1, 3, 5	Yes 💧	None	Town, facilities manager	\$100,000	The Well will be protected to the 500 year flood level.		HMGP	High	SIP	PP
		Solution: The town will elevate electrical components.												
T. Chenango-14	Protect the Route 12A Well to the 500 year flood level	Problem: The facility is in the 100 year floodplain.	Flood	1, 3, 5	Yes 💧	None	Town, facilities manager		The Well will be protected to the 500 year flood level.		HMGP	High	SIP	PP
		Solution: The town will contact the facilities manager and discuss options for protecting the facility to the 500 year level												
T. Chenango-15	Protect the Chenango Forks High School to the 500 year flood level	Problem: The facility is in the 100 year floodplain.	Flood	1, 3, 5	Yes 💧	None	Town Floodplain Administrator working with facility operators / owners	<\$100	Provide outreach to the property owner and informing them of potential flood damage and possible solutions	Within 6 months	Municipal budget	Medium	EAP	PI
		Solution: The town will contact the facilities manager and discuss options for protecting the facility to the 500 year level.												
T. Chenango-16	Update the NFIP Flood Damage Prevention Ordinance	Problem: The current flood damage prevention ordinance does not include NYS freeboard requirements although the Building Code does.	Flood	1	No	None	Floodplain Administrator	<\$100	Higher building standards and lower flood exposure	Within 1 year	Municipal budget	High	LPR	PR
		Solution: Flood Damage Prevention Ordinance will be updated to include freeboard requirement.												

Notes:

Not all acronyms and abbreviations defined below are included in the table.

Acronyms and Abbreviations:

- CAV Community Assistance Visit
- CRS Community Rating System
- DPW Department of Public Works
- FEMA Federal Emergency Management Agency

Potential FEMA HMA Funding Sources:

- FMA Flood Mitigation Assistance Grant Program
- HMGP Hazard Mitigation Grant Program
- PDM Pre-Disaster Mitigation Grant Program

Timeline:

The time required for completion of the project upon implementation

Cost:

The estimated cost for implementation.





- FPA Floodplain Administrator
- HMA Hazard Mitigation Assistance
- N/A Not applicable
- NFIP National Flood Insurance Program
- OEM Office of Emergency Management

Benefits:

A description of the estimated benefits, either quantitative and/or qualitative.

Mitigation Category:

- Local Plans and Regulations (LPR) – These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.
- Structure and Infrastructure Project (SIP) - These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.
- Natural Systems Protection (NSP) – These are actions that minimize damage and losses and preserve or restore the functions of natural systems.
- Education and Awareness Programs (EAP) – These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities

CRS Category:

- Preventative Measures (PR) - Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.
- Property Protection (PP) - These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.
- Public Information (PI) - Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.
- Natural Resource Protection (NR) - Actions that minimize hazard loss and preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
- Structural Flood Control Projects (SP) - Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.
- Emergency Services (ES) - Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities

Critical Facility:


- Yes  - Critical Facility located in 1% floodplain



Table 9.5-13. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community	Total	High / Medium / Low
T. Chenango-1	Frederick Road Stormwater Upgrades	0	1	1	0	1	1	0	1	1	1	1	1	1	1	11	High
T. Chenango-2	Town-wide Stream Maintenance Education Program	0	1	1	1	1	1	1	1	1	1	1	1	1	1	13	High
T. Chenango-3	Grant Road Acquisition	1	1	1	1	1	1	0	1	0	1	1	1	1	1	12	High
T. Chenango-4 (former 1)	Smith Hill Creek (Wallace Road) Stormwater Management System	0	1	1	1	1	1	1	1	1	1	1	0	1	1	12	High
T. Chenango-5	Northgate Plaza Flap Gate	0	1	0	1	1	0	0	1	1	1	0	0	1	1	8	Medium
T. Chenango-6	Town Hall Backup Generator	1	0	1	1	1	1	0	1	1	1	1	1	1	1	12	High
T. Chenango-7 (former 6)	Create and maintain a command center for disaster response at Town Hall.	1	1	1	1	1	0	1	0	0	1	1	0	0	0	8	Medium
T. Chenango-8 (former 9)	Prepare and make available a simple pamphlet detailing pertinent information for new residents or anyone interested in learning more about natural hazards that may affect Town residents.	1	1	1	1	1	0	1	0	0	1	1	0	0	0	8	Medium
T. Chenango-9 (former Flood 1)	Purchase, relocate, or elevate structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority.	1	1	1	1	1	1	1	1	1	1	0	1	0	1	12	High
T. Chenango-10 (former Flood 8)	Improve post-disaster capabilities	1	0	0	0	1	1	1	1	1	0	1	0	0	1	8	Medium



Table 9.5-13. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community	Total	High / Medium / Low
T. Chenango-11	Protect the Northgate Waste Water Treatment Plant to the 500 year flood level	0	1	0	1	1	0	1	1	1	0	0	0	1	1	8	Medium
T. Chenango-12	Protect the Northgate Well to the 500 year flood level	0	1	0	1	1	0	1	1	1	0	0	0	1	1	8	High
T. Chenango-13	Protect the Pennview Well to the 500 year flood level	0	1	0	1	1	0	1	1	1	0	0	0	1	1	8	High
T. Chenango-14	Protect the Route 12A Well to the 500 year flood level	0	1	0	1	1	0	1	1	1	0	0	0	1	1	8	High
T. Chenango-15	Protect the Chenango Forks High School to the 500 year flood level	0	1	0	1	1	0	1	1	1	0	0	0	1	1	8	Medium
T. Chenango-16	Update the NFIP Flood Damage Prevention Ordinance	1	1	1	1	1	1	1	1	1	1	0	1	0	1	12	High

Note: Refer to Section 6, which conveys guidance on prioritizing mitigation actions. Low (0-4), Medium (5-8), High (9-14).



9.5.7 Future Needs To Better Understand Risk/Vulnerability

None at this time.

9.5.8 Staff and Local Stakeholder Involvement in Annex Development

The Town of Chenango followed the planning process described in Section 3 (Planning Process) in Volume I of this plan update. This annex was developed over the course of several months with input from many Village departments, including: the Town Supervisor, Engineering, Highway Department, and Town Assessor. The Town Supervisor represented the community on the Broome County Hazard Mitigation Plan Planning Partnership and supported the local planning process requirements by securing input from persons with specific knowledge to enhance the plan. All departments were asked to contribute to the annex development through reviewing and contributing to the capability assessment, reporting on the status of previously identified actions, and participating in action identification and prioritization.

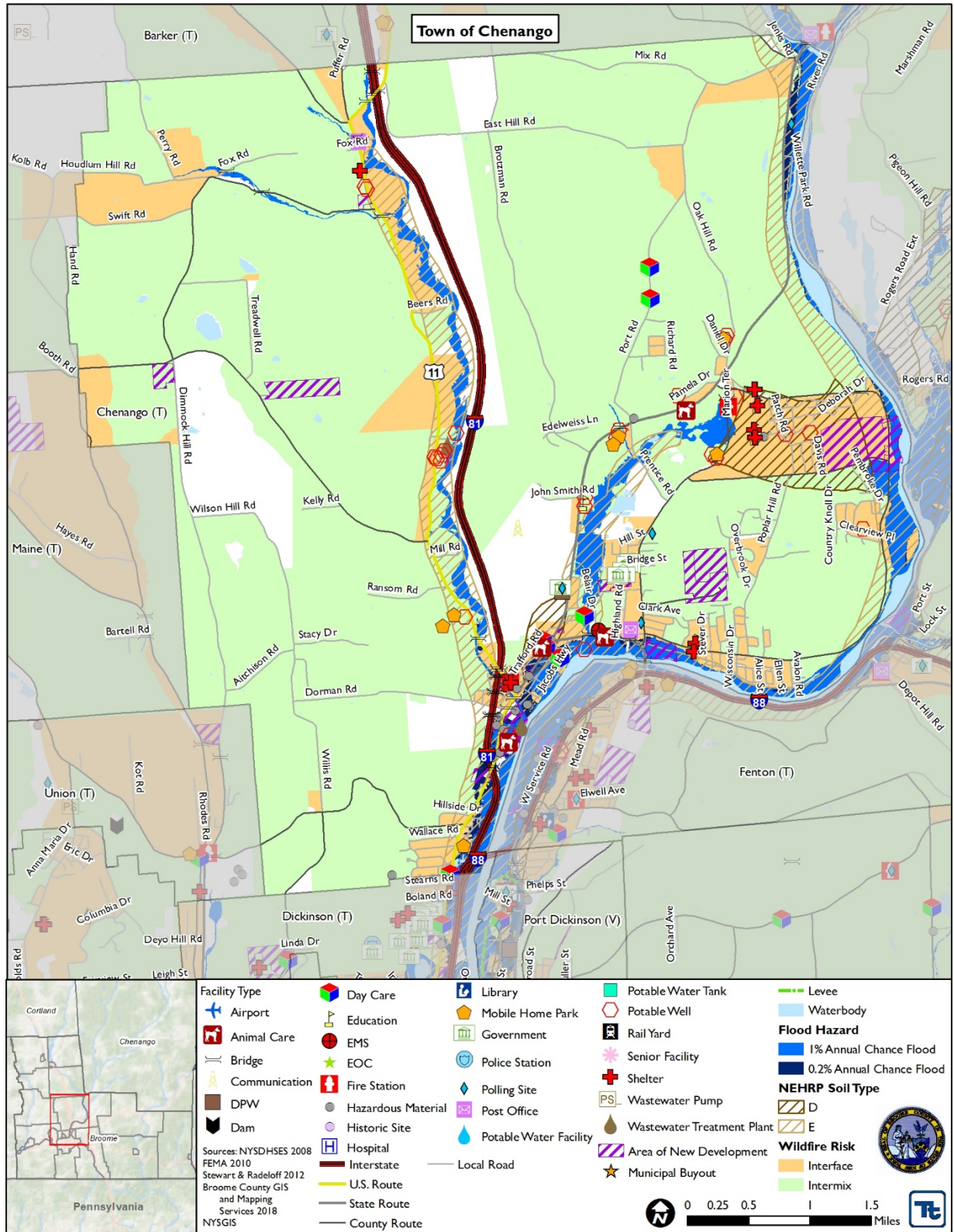
Additional documentation on the municipality's planning process through Planning Partnership meetings is included in Section 3 (Planning Process) and Appendix C (Meeting Documentation).

9.5.9 Hazard Area Extent and Location

Hazard area extent and location maps have been generated for the Town of Chenango that illustrate the probable areas impacted within the municipality. These maps are based on the best available data at the time of the preparation of this plan and are considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the Town of Chenango has significant exposure. A map of the Town of Chenango hazard area extent and location is provided on the following page. This map indicates the location of the regulatory floodplain as well as identified critical facilities within the municipality.



Figure 9.5-1. Town of Chenango Hazard Area Extent and Location Map





Town of Chenango Action Worksheet			
Project Name:	Frederick Road Stormwater Upgrades		
Project Number:	T. Chenango-1		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Storm		
Description of the Problem:	Frederick Road is prone to flooding, resulting in road closures and possible damages to properties. The town is completing a hydrologic analysis of Frederick Road.		
Action or Project Intended for Implementation			
Description of the Solution:	The completion of the hydrologic study will allow for engineering and construction to be conducted to address the flooding issues. Likely construction may include culvert and Stormwater upgrades.		
Is this project related to a Critical Facility?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Is this project related to a Critical Facility located within the 100-year floodplain?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
Level of Protection:	Dependent on hydrologic study results. Construction to 50-year storm standard likely.	Estimated Benefits (losses avoided):	Reduction in flooding frequency and intensity in area surrounding Frederick Road
Useful Life:	50 years	Goals Met:	5
Estimated Cost:	\$2.5 million	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	5 years
Estimated Time Required for Project Implementation:	5 years	Potential Funding Sources:	HMGP, CDBG
Responsible Organization:	Town Engineer, Highway Department	Local Planning Mechanisms to be Used in Implementation if any:	Stormwater Planning
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Buyout properties prone to flooding	\$200,000 per property	Continued flooding of roadway
	Elevate properties prone to flooding	\$50,000 per property	Continued flooding of roadway
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Frederick Road Stormwater Upgrades	
Project Number:	T. Chenango-1	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	Properties in surrounding area will have lower flood exposure.
Cost-Effectiveness	1	
Technical	0	Project will involve engineering phase.
Political	1	
Legal	1	Town has the legal authority to conduct the project.
Fiscal	0	Project will require grant funding support.
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Severe Storm, Flood
Timeline	1	
Agency Champion	1	Town Engineer, Highway Department
Other Community Objectives	1	Stormwater upgrades
Total	11	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Town-wide Stream Maintenance Education Program		
Project Number:	T. Chenango-2		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Storm		
Description of the Problem:	There is currently no formal public education and outreach program to inform residents on proper stream management practices, permitting processes, or which agencies to talk with when there are questions. A town-wide program is needed to alleviate this problem. Considerable town resources are devoted to answering public inquiries on this subject. The town has 10 or better streams, some named and others tributaries. Private owned behind residences		
Action or Project Intended for Implementation			
Description of the Solution:	The town will develop public outreach materials to educate residents about stream management, which agencies have jurisdiction, and stream cleanup after flash flood events. Outreach materials will include development of a flyer, website postings, etc. The town will work with appropriate county and state agencies (SWCD, Broome-Tioga Stormwater, NYS DEC) to help to develop and support outreach.		
Is this project related to a Critical Facility?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Is this project related to a Critical Facility located within the 100-year floodplain?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
Level of Protection:	Educated public	Estimated Benefits (losses avoided):	Educated public. Less staff time dedicated to public responses and inquiries after flooding events.
Useful Life:	Would need annual revisiting	Goals Met:	1, 2
Estimated Cost:	\$2,000	Mitigation Action Type:	Education and Awareness Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 18 months
Estimated Time Required for Project Implementation:	6 months then ongoing	Potential Funding Sources:	Municipal budget, support from County SWCD, Broome-Tioga Stormwater, NYS DEC
Responsible Organization:	Town Highway Department with support from County SWCD, Broome-Tioga Stormwater, NYS DEC	Local Planning Mechanisms to be Used in Implementation if any:	Stormwater Planning-MS4 Goals
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues
	Ask non-profits to complete outreach	\$0	Dependent on non-profit response, may not be sustainable over time.
	Ask state to complete outreach	\$0	State unlikely to dedicate necessary resources to conduct outreach on behalf of town.
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Town-wide Stream Maintenance Education Program	
Project Number:	T. Chenango-2	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	
Cost-Effectiveness	1	
Technical	1	
Political	1	The public consistently asks for information on stream maintenance.
Legal	1	
Fiscal	1	
Environmental	1	Will prevent homeowners from taking illegal actions that would damage stream ecosystems
Social	1	
Administrative	1	Project will free administrative staff time.
Multi-Hazard	1	Flood, Severe Storm
Timeline	1	
Agency Champion	1	Town Highway Department with support from County SWCD, Broome-Tioga Stormwater, NYS DEC
Other Community Objectives	1	Public education initiatives
Total	13	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Grant Road Acquisition		
Project Number:	T. Chenango-3		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Storm		
Description of the Problem:	The area of Grant Road and Booth Road repeatedly floods, impacting one home. The structure is not in the 100 year floodplain but has been damaged and require evacuations several times. This poses a threat to the life and safety (physical and mental) of the residents and puts stress on town personnel. While work has been done in this area, replacement of the 36" culvert twice, it has not been effective, and this area is still prone to flooding and damages. The cost of replacement of the pipe was \$55,000 each time.		
Action or Project Intended for Implementation			
Description of the Solution:	The town will buyout and demolish the impacted property, preventing future damages and lowering the need for municipal response.		
Is this project related to a Critical Facility?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Is this project related to a Critical Facility located within the 100-year floodplain?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
Level of Protection:	Property no longer vulnerable to flooding	Estimated Benefits (losses avoided):	Property will no longer be damaged in flooding events and required municipal response to flooding will be reduced.
Useful Life:	100 years	Goals Met:	5
Estimated Cost:	\$46,000	Mitigation Action Type:	Structural and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 1 year of funding
Estimated Time Required for Project Implementation:	6 months	Potential Funding Sources:	FEMA FMA, PDM
Responsible Organization:	Town Supervisor with support from the homeowners	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Elevate property	\$40,000	Evacuations and municipal response will still be necessary.
	Repair and replace culvert drainage pipe	\$55,000	Exceeds cost of home and may continue to be ineffective.
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Grant Road Acquisition	
Project Number:	T. Chenango-3	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	The impacted property has required evacuations in the past
Property Protection	1	The property will no longer be exposed to flooding
Cost-Effectiveness	1	The cost of the project is lower than the cost of another culvert pipe replacement
Technical	1	
Political	1	
Legal	1	The town has the legal authority to complete the project
Fiscal	0	The project will require FEMA funding assistance
Environmental	1	
Social	0	The property owners may decide to relocate out of the town.
Administrative	1	
Multi-Hazard	1	Flood, Severe Storm
Timeline	1	
Agency Champion	1	Town Supervisor with support from the homeowners
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	