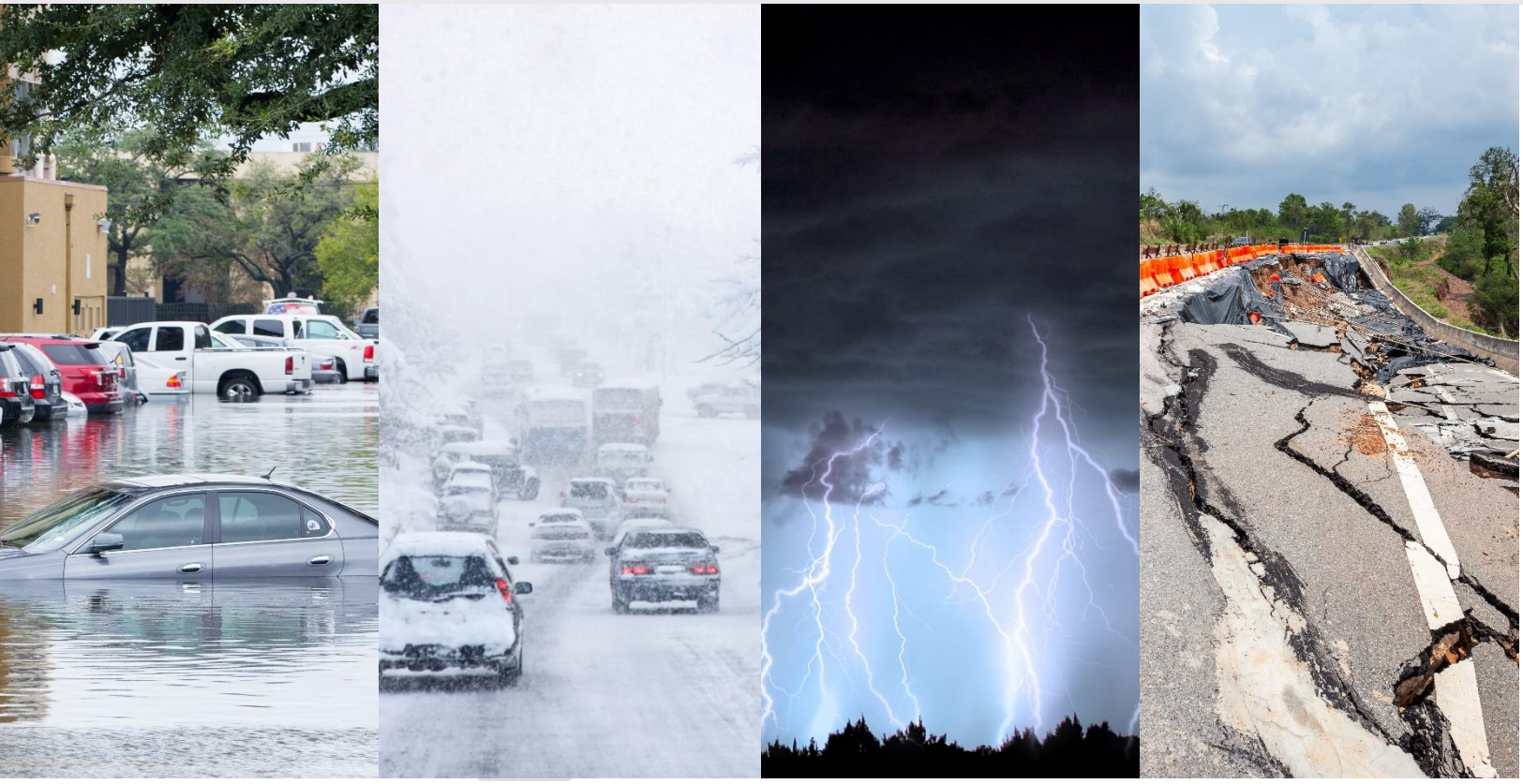
Seneca County, New York

Hazard Mitigation Plan

Volume III - Appendices



February 2025

TETRA TECH

Seneca County Hazard Mitigation Plan

#105s039541
February 2025

PRESENTED TO

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APPENDIX A: RESOLUTIONS

The Seneca County and municipal adoption resolutions will be included in this appendix upon receipt of the Federal Emergency Management Agency (FEMA) Approval Pending Adoption (APA) status. Please refer to Chapter 2 (Planning Process) for additional information on plan adoption procedures.

This appendix also includes an example resolution to be submitted by Seneca County and participating jurisdictions authorizing adoption of the 2025 Seneca County Hazard Mitigation Plan Update.

Sample Resolution

(LOCAL GOVERNMENT, INCLUDING SPECIAL DISTRICTS), New York

RESOLUTION NO. _____

A RESOLUTION OF THE (LOCAL GOVERNMENT) ADOPTING THE 2025 Seneca County Hazard Mitigation Plan

WHEREAS the (local governing body) recognizes the threat that natural hazards pose to people and property within (local government); and

WHEREAS the (local government) has prepared a multi-hazard mitigation plan, hereby known as (title and date of mitigation plan) in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS (title and date of mitigation plan) identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in (local community) from the impacts of future hazards and disasters; and

WHEREAS adoption by the (local governing body) demonstrates their commitment to hazard mitigation and achieving the goals outlined in the (title and date of mitigation plan).

NOW THEREFORE, BE IT RESOLVED BY THE (LOCAL COMMUNITY), New York, THAT:

Section 1. In accordance with (local rule for adopting resolutions), the (local governing body) adopts the (title and date of mitigation plan). This plan, approved by the community, may be edited or amended after submission for review, but will not require the community to re-adopt any further iterations. This only applies to this specific plan and does not absolve the community from updating the plan in 5 years.

ADOPTED by a vote of ____ in favor and ____ against, and ____ abstaining, this _____ day of _____, _____.

By: _____

(print name)

ATTEST: By: _____

(print name)

APPROVED AS TO FORM: By: _____

(print name)

APPENDIX B: MEETING DOCUMENTATION

Appendix B includes meeting agendas, slides, and minutes (where applicable and available) for meetings convened during the development of the 2025 Seneca County Hazard Mitigation Plan Update.

APPENDIX C: PUBLIC AND STAKEHOLDER OUTREACH

This appendix provides documentation of public and stakeholder outreach. Stakeholder involvement in this planning process was broad and productive as discussed and further documented in Chapter 2 (Planning Process). Public and stakeholder input has been incorporated throughout this HMP as appropriate, as identified in Chapter 2 and the References section, as well as within specific mitigation initiatives identified within the jurisdictional annexes (Volume II). Respondent feedback filtered by jurisdiction is included in each jurisdictional annex as available to provide an indication of community resident concerns related to natural hazards.

SENECA COUNTY PUBLIC SURVEY RESULTS

This section contains information and results gathered from the Seneca County Public Survey. The main objective of this survey was to gather information from citizens regarding their level of knowledge regarding hazard vulnerability and knowledge of hazard mitigation information for their local communities. Roughly 25 respondents completed this survey during the planning process. The survey was available on Seneca County website and the HMP website at: https://www.senecacountynyhmp.com/. The survey results are provided in the following pages, with personal information redacted.

STAKEHOLDER SURVEYS

In addition to collecting information from residents of Seneca County, surveys were developed for the agencies and stakeholders in the County. Unlike steering committee or planning partnership members, stakeholders may not be involved in all stages of the planning process, but they may have information or input to provide. In order to gather that information, the surveys were sent to the following stakeholders: law enforcement, firefighters, emergency medical services, highway and public works, business and commerce, hospitals and health care providers, and utilities. Results of the surveys are provided in the following pages, with personal information redacted.

NEIGHBORING COMMUNITY SURVEY

A neighboring community survey was sent to the surrounding communities of Seneca due to their proximity to the County and because the effects of hazard events that impact Seneca County would be similar to that of their neighbors. A summary of the results are included on the following pages.

WEBSITE AND SOCIAL MEDIA POSTS

The following provides screenshots of websites and social media posts.

APPENDIX D: PARTICIPTION MATRIX

The matrix in Appendix D is intended to give a broad overview of FEMA, New York State, County, municipal and stakeholder personnel that participated in the Seneca County HMP update planning process. Meeting attendees and input provided are also included. All participants were encouraged to attend the kick-off meeting, risk assessment meeting, and mitigation strategy workshop. Participants unable to attend a Steering Committee and Planning Partnership meeting were provided access to meeting recordings and materials. During the planning process the consultant contacted each participant to offer support, explain the process, and facilitate the submittal and review of critical documents.

Participation is defined as having input to the hazard analysis (providing critical facility, hazard event, vulnerability data), and as having participated in the mitigation workshop or alternate annex meetings as described in the HMP for the purpose of creating a mitigation strategy to be included in each municipalities annex in Volume II.

Jurisdiction	Name	Title	Primary POC	Alternate POC	Attended SC Kickoff Meeting, 11/02/23	Attended PP Kickoff Meeting, 11/02/23	Attended SC Risk Assessment Review Meeting, 09/12/24	Attended Risk Assessment and Mitigation Strategy Meeting, 09/19/24	Attended Morning Draft Plan Review Meeting, 02/18/25	Attended Evening Draft Plan Review Meeting, 02/18/25	Individual Meetings with the County and/or Contractor
Seneca County	Mike Enslow	Chairman of the Board			X	X				X	
Seneca County	Melissa Taylor	911 and Emergency Management Director	X		X	X	X	X	X	X	X
Seneca County	Toni DiGiovanni	Deputy Emergency Management Director		X	X	X	X	X	X	X	X
Seneca County	Jeffrey Case	Fire Coordinator			X	X	X			X	
Seneca County	Amanda Forney	GIS Technician									
Seneca County	Kristopher Rodger	Public Safety Administrator			X	X		X			
Seneca County	Annie Mahoney	Deputy Commissioner, Division of Human Services			X		X				
Seneca County	Michael Whirtley	Deputy Commissioner, Division of Human Services			X		X				
Seneca County	Margaret Morse	Director, Mental Health Services			X		X		X		
Seneca County	Alex McGraw	Soil and Water District					X				
Seneca County	Erin Peruzzini	District Technician, Soil and Water District			X		X		X		
Seneca County	Roy Gates	Superintendent, Highway Department			X		X		X		
Seneca County	Stacey Bennett	Highway Department			X						
Seneca County	Scott King	Director of Public Health			X						
Seneca County	Mark Shaw	Code Enforcement Officer									
Seneca County	Harriet Haynes	Senior Planner									
Seneca County	Jill Henry	Director, Planning Board						X			
Seneca County	Lee Earp	Code Enforcement Officer								X	

Jurisdiction	Name	Title	Primary POC	Alternate POC	Attended SC Kickoff Meeting, 11/02/23	Attended PP Kickoff Meeting, 11/02/23	Attended SC Risk Assessment Review Meeting, 09/12/24	Attended Risk Assessment and Mitigation Strategy Meeting, 09/19/24	Attended Morning Draft Plan Review Meeting, 02/18/25	Attended Evening Draft Plan Review Meeting, 02/18/25	Individual Meetings with the County and/or Contractor
Seneca County	Jeff Shipley	President, Chamber of Commerce							X		
Town of Covert	Michael Reynolds	Town Supervisor	X			X		X			
Town of Covert	Jeffrey MacCheyne	Highway Superintendent		X							
Town of Covert	Roger Ward	Code Enforcement Officer									
Town of Covert	Susan Frykholm	Town Representative						X			
Town of Covert	Leslie Adams	Town Clerk									
Town of Fayette	Jeffrey Trout	Town Supervisor	X			X					X
Town of Fayette	Jenn Salone	Councilwoman		X		X					
Town of Fayette	Mike Combs	Land Use Officer									
Town of Fayette	Scott King	Director of Public Health									
Town of Fayette	Andrew Brown	Highway Superintendent									
Town of Junius	Ernie Brownwell	Town Supervisor	X								X
Town of Junius	David Fisk	Highway Superintendent		X							
Town of Lodi	Kyle Barnhart	Former Town Supervisor									
Town of Lodi	Luke Latini	Town Supervisor	X					X			X
Town of Lodi	Rick Jacot	Highway Superintendent		X							
Town of Ovid	Joe Borst	Town Supervisor	X			X		X		X	
Town of Ovid	Jeremy Huff	Highway Superintendent		X							
Town of Romulus	David Haynes	Town Supervisor	X			X					
Town of Romulus	Janet Lynch	Planning Board Chairperson		X							X
Town of Romulus	Tim Dorn	Code Enforcement Officer									

Jurisdiction	Name	Title	Primary POC	Alternate POC	Attended SC Kickoff Meeting, 11/02/23	Attended PP Kickoff Meeting, 11/02/23	Attended SC Risk Assessment Review Meeting, 09/12/24	Attended Risk Assessment and Mitigation Strategy Meeting, 09/19/24	Attended Morning Draft Plan Review Meeting, 02/18/25	Attended Evening Draft Plan Review Meeting, 02/18/25	Individual Meetings with the County and/or Contractor
Town of Seneca Falls	Michael Ferrara	Former Town Supervisor									
Town of Seneca Falls	Frank Schmitter	Town Supervisor	X							X	
Town of Seneca Falls	Thomas Cleere	Sergeant, Police Department		X	X						
Town of Seneca Falls	Peter Porcelli	Zoning & Code Enforcement Officer									
Town of Seneca Falls	Peter Soscia	Town Manager									
Town of Tyre	Elizabeth Partee	Town Supervisor	X			X		X			
Town of Tyre	Eric Bush	Highway Superintendent		X							
Town of Varick	Robert Hayssen	Town Supervisor	X								X
Town of Varick	Ben Freier	Highway Superintendent		X							
Town of Varick	Tim Dorn	Code Enforcement Officer									
Town of Varick	Donna Karlsen	Town Clerk									
Town of Waterloo	Don Trout	Town Supervisor	X			X					
Town of Waterloo	Joe Mull	Highway Superintendent		X							X
Town of Waterloo	Jim Cleere	Assessor/Code/Zoning									
Village of Interlaken	Richard Richardson	Mayor	X			X		X			
Village of Interlaken	Nancy Swartwood	Village Clerk		X							
Village of Interlaken	Wes Ahouse	Highway Supervisor									
Village of Lodi	Rose Riley	Mayor	X								
Village of Lodi	Nancy Jones	Village Clerk		X							
Village of Ovid	Leon Kelly	Mayor	X			X					
Village of Ovid	Jeremy Huff	Superintendent of Highway		X							

Jurisdiction	Name	Title	Primary POC	Alternate POC	Attended SC Kickoff Meeting, 11/02/23	Attended PP Kickoff Meeting, 11/02/23	Attended SC Risk Assessment Review Meeting, 09/12/24	Attended Risk Assessment and Mitigation Strategy Meeting, 09/19/24	Attended Morning Draft Plan Review Meeting, 02/18/25	Attended Evening Draft Plan Review Meeting, 02/18/25	Individual Meetings with the County and/or Contractor
Village of Ovid	Cathy Kerns	Clerk and Treasurer									
Village of Ovid	Michael Snyder	Former Superintendent of Highway									
Village of Waterloo	Walter Bennett	Mayor		X							
Village of Waterloo	Don Northrup	Administrator	X			X		X		X	X
Village of Waterloo	Lee Marquart	Code Enforcement Officer									

APPENDIX E: ACTION WORKSHEET TEMPLATE

This appendix includes the instructions and template provided for the development of Mitigation Strategy Action Worksheets. These worksheets are included in each jurisdictional annex of the plan in compliance with NYS DHSES Mitigation Guidance.

Action Name:			
Lead Agency:			
Supporting Agencies:			
Hazard(s) of Concern:	☐Dam Failure ☐Drought ☐Earthquake ☐Extreme Temperature	☐Flood ☐Landslide ☐Severe Storm ☐Severe Winter Storm	
Description of the Problem:			
Description of the Solution:			
Estimated Cost:			
Potential Funding Sources:			
Implementation Timeline:			
Goals Met:			
Benefits:			
Impact on Socially Vulnerable Populations:			
Impact on Future Development:			
Impact on Critical Facilities/Lifelines:			
Impact on Capabilities:			
Climate Change Considerations:			
Mitigation Category	☐Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)	
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)	
Priority	☐High	☐Medium	☐Low
Alternatives:	**Action**	**Evaluation**	
	No Action	Current problem continues	

GUIDANCE TO COMPLETE THE MITIGATION ACTION WORKSHEET

The following provides additional guidance on how to complete the Mitigation Action Worksheet. Please note that NYS DHSES requires a minimum of two proposed mitigation activities.

Action Worksheet

Action Name: Each action must have a unique project number referenced here and in the Action Tables.

Lead Agency: Identify the name of a department or agency responsible for implementation, not the jurisdiction.

Supporting Agencies: Identify the name of any departments or agencies which will support the efforts of the lead agency.

Hazard(s) of Concern: Please identify the hazard(s) being addressed with this action. The Hazards of Concern included in the Seneca County Hazard Mitigation Plan include:

- Dam Failure
- Disease Outbreak
- Drought
- Extreme Temperature
- Flood
- Severe Storm
- Severe Winter Storm
- Wildfire

Description of the Problem: Provide a detailed narrative of the problem. Describe the natural hazard you wish to mitigate, its impacts to the jurisdiction, past damages, and loss of service, etc. Include the street address of the property/project location (if applicable), adjacent streets, and easily identified landmarks such as water bodies and well-known structures, and end with a brief description of existing conditions (topography, terrain, hydrology) of the site.

Description of the Solution: Provide a detailed narrative of the solution. Describe the physical area (project limits) to be affected, both by direct work and by the project's effects; how the action would address the existing conditions previously identified; proposed construction methods, including any excavation and earth-moving activities; where you are in the development process (e.g., are studies and/or drawings complete), etc., the extent of any analyses or studies performed (attach any reports or studies).

Estimated Cost: Provide an estimated cost for implementation; rough dollar figures are preferred, but if unknown, a specified range is acceptable. Consider all costs associated with implementation. (Low <$10,000, Medium $10,000-$100,000, High >$100,000).

Potential Funding Source(s): Multiple sources of potential funding should be listed when appropriate.

Estimated Time Required for Project Implementation: Provide the estimated time required to complete the project from start to end. (Short-term, Long-term, or On-going/Continuous)

Goals Met:

- Goal 1: Protect life, property, and the environment from current and future impacts.
- Goal 2: Coordinate hazard mitigation programs and other planning efforts that affect the County.
- Goal 3: Increase public preparedness and awareness of natural hazards.
- Goal 4: Enhance mitigation capabilities to reduce hazard vulnerabilities.
- Goal 5: Support continuity of operations before, during, and after hazard events.
- Goal 6: Reduce the risk of natural hazards for socially vulnerable populations and underserved communities.
- Goal 7: Address long-term vulnerabilities from high hazard dams.

Benefits: Identify the benefits that implementation of this project will provide. If dollar amounts are known, include them. If dollar amounts are unknown or are unquantifiable, describe the losses that will be avoided.

Impact on Socially Vulnerable Populations: Provide a narrative on how this action will impact socially vulnerable populations within the jurisdiction and other impacted areas. These impacts can be positive or negative.

Impact on Future Development: Provide a narrative on how this action will impact future development within the jurisdiction and other impacted areas. These impacts can be positive or negative.

Impact on Critical Facilities/Lifelines: Provie a narrative on how this action will impact critical facilities and community lifelines within the jurisdiction and other impacted areas. These impacts can be positive or negative.

Impact on Capabilities: Provide a narrative on how this action will impact capabilities within the jurisdiction and other impacted areas. These impacts can be positive or negative.

Climate Change Considerations: Provide a brief narrative on how climate change may exacerbate conditions which could impact this action.

Mitigation Action Type:

- 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 also 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:

- 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

Prioritization: Please enter High/Medium/Low. Refer to the prioritization exercise and table.

Actions/Projects Considered: Please consider three different options to mitigate the problem identified. One alternative is always to accept the current level or risk (tolerate the vulnerability/problem) by deciding to take no action at this time. If you choose to take no action, please complete the worksheet up to and including this section and this will be noted in the Plan.

Please include the name of the action considered and a brief reason as to why the action was not selected. The reasoning documents the consideration of these alternatives.

Guidance to Complete the Prioritization Table

Complete this table to help evaluate and prioritize each mitigation action being considered by your municipality. Please use these 14 criteria to assist in evaluating and prioritizing new mitigation actions identified. Specifically, for each new mitigation action, assign a numeric rank (-1, 0, or 1) for each of the 14 evaluation criteria in the provided table, defined as follows:

1 = Highly effective or feasible

0 = Neutral

-1 = Ineffective or not feasible

Use the numerical results of this exercise to help prioritize your actions as “Low”, “Medium” or “High” priority. Your municipality may recognize other factors or considerations that affect your overall prioritization; these should be identified in narrative in the Priority field of the worksheet. The 14 evaluation/prioritization criteria are:

1. Life Safety—How effective will the action be at protecting lives and preventing injuries? Will the proposed action adversely affect one segment of the population?
2. Property Protection—How significant will the action be at eliminating or reducing damage to structures and infrastructure?
3. Cost-Effectiveness—Are the costs to implement the action commensurate with the benefits achieved?
4. Political—Is there overall public support for the action? Is there the political will to support it? Is the action at odds with development pressures?
5. Legal—Does the jurisdiction have the authority to implement the action?

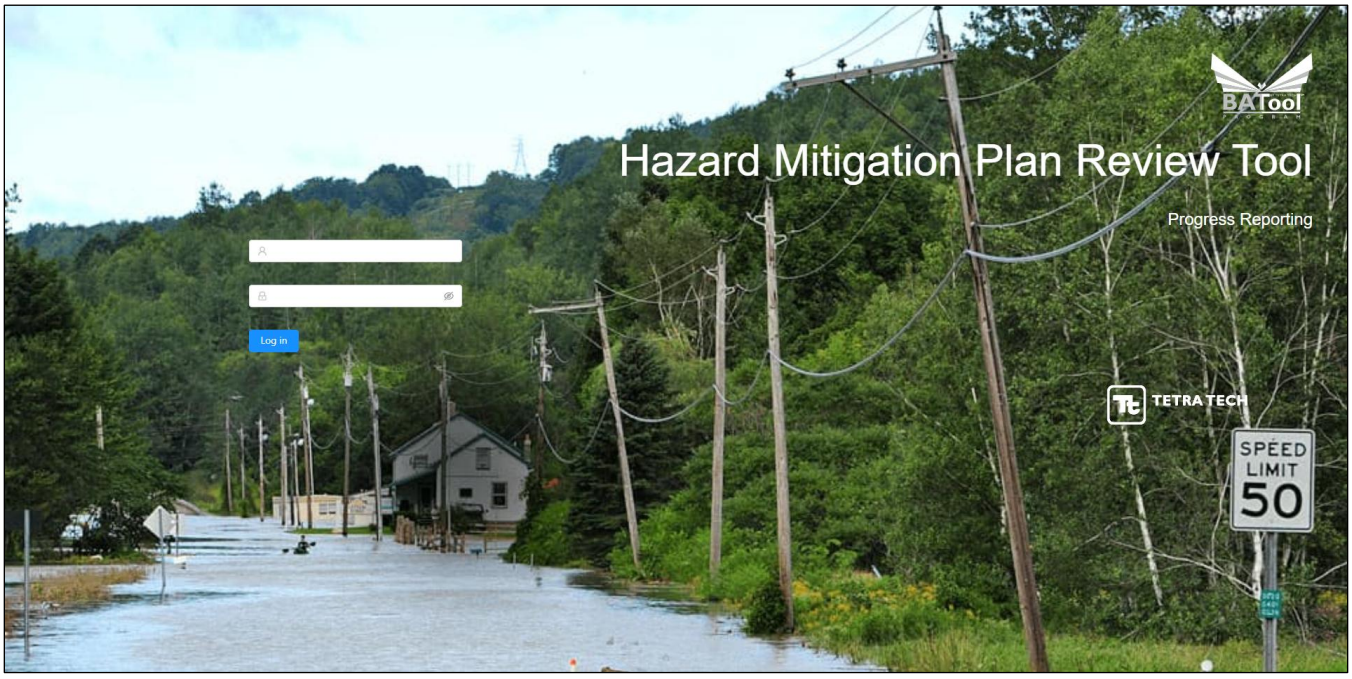
6. Fiscal—Is funding for the action available under existing program budgets or would it require a new budget authorization or funding from another source, such as grants?
7. Environmental—What are the potential environmental impacts of the action? Will it comply with environmental regulations? Are there co-benefits of this action?
8. Social Vulnerability—Does the action benefit socially vulnerable populations and underserved communities?
9. Administrative—Does the jurisdiction have the staff and administrative capabilities to implement the action and maintain it or will outside help be necessary? Does the scale and scope of the action align with the jurisdiction's capabilities?
10. Hazards of Concern—Does the action address one or more of the jurisdiction's high-ranked hazards?
11. Climate Change—Does the action incorporate climate change projections? Is the action designed to withstand or address long-term conditions?
12. Timeline—Can the action be completed in less than five years?
13. Community Lifelines—Does the action benefit community lifelines?
14. Other Local Objectives—Does the action advance other local objectives, such as capital improvements, economic development, environmental quality, or open space preservation? Does it support the policies of other plans and programs?

APPENDIX F: PLAN MAINTENANCE TOOLS

This appendix includes tools and worksheets to facilitate plan maintenance and review by the Seneca County Steering Committee and Planning Partnership.

In the first year of the performance period, an online performance progress reporting system, the BATool[SM] will provide municipal and county representatives direct access to their mitigation initiatives to easily update the status of each project, document successes or obstacles to implementation, add or delete projects to maintain mitigation project implementation. This online program will capture information and roll all input into a report to summarize mitigation strategy progress.

Figure F-1. BATool[SM] Screenshot



The FEMA 386-4 guidance worksheets are also available to assist with progress reporting. These worksheets are provided in this section for ease of access to the HMP Coordinator and Planning Partnership to maintain the 2025 HMP throughout its period of performance.

Worksheet #1 Progress Report step 2

Progress Report Period: _____ (date) to _____ (date)

Project Title: _____ Project ID#: _____

Responsible Agency: _____

Address: _____

City/County: _____

Contact Person: _____ Title: _____

Phone #(s): _____ email address: _____

List Supporting Agencies and Contacts:

_____

_____

_____

Total Project Cost: _____

Anticipated Cost Overrun/Underrun: _____

Date of Project Approval: _____ Start date of the project: _____

Anticipated completion date: _____

Description of the Project (include a description of each phase, if applicable, and the time frame for completing each phase): _____

_____

_____

Milestones	Complete	Projected Date of Completion

Plan Goal(s)/Objective(s) Addressed:

Goal: _____

Objective: _____

Indicator of Success (e.g., losses avoided as a result of the acquisition program):

In most cases, you will list losses avoided as the indicator. In cases where it is difficult to quantify the benefits in dollar amounts, you will use other indicators, such as the number of people who now know about mitigation or who are taking mitigation actions to reduce their vulnerability to hazards.

_____

_____

Status (Please check pertinent information and provide explanations for items with an asterisk. For completed or canceled projects, see Worksheet #2 — to complete a project evaluation):

Project Status

☐ Project on schedule

☐ Project completed

☐ Project delayed*

*explain: _____

_____

☐ Project canceled

Project Cost Status

☐ Cost unchanged

☐ Cost overrun*

*explain: _____

_____

☐ Cost underrun*

*explain: _____

_____

Summary of progress on project for this report:

A. What was accomplished during this reporting period?

_____

_____

_____

_____

B. What obstacles, problems, or delays did you encounter, if any?

_____

_____

_____

C. How was each problem resolved?

_____

_____

_____

Next Steps: What is/are the next step(s) to be accomplished over the next reporting period?

Other comments:

Worksheet #2 Evaluate Your Planning Team step 3

When gearing up for the plan evaluation, the planning team should reassess its composition and ask the following questions:	YES	NO
Have there been local staffing changes that would warrant inviting different members to the planning team?		
Comments/Proposed Action:		
Are there organizations that have been invaluable to the planning process or to project implementation that should be represented on the planning team?		
Comments/Proposed Action:		
Are there any representatives of essential organizations who have not fully participated in the planning and implementation of actions? If so, can someone else from this organization commit to the planning team?		
Comments/Proposed Action:		
Are there procedures (e.g., signing of MOAs, commenting on submitted progress reports, distributing meeting minutes, etc.) that can be done more efficiently?		
Comments/Proposed Action:		
Are there ways to gain more diverse and widespread cooperation?		
Comments/Proposed Action:		
Are there different or additional resources (financial, technical, and human) that are now available for mitigation planning?		
Comments/Proposed Action:		

If the planning team determines the answer to any of these questions is "yes," some changes may be necessary.

Worksheet #3 Evaluate Your Project Results step 3

Project Name and Number: _____

Project Budget: _____

Project Description: _____

Associated Goal and Objective(s): _____

Indicator of Success (e.g., losses avoided): _____

Insert location map.
Include before and after photos if appropriate.

Was the action implemented? ☐ YES ☐ NO

IF NO

Why not?	YES	NO
Was there political support for the action?	☐	☐
Were enough funds available?	☐	☐
Were workloads equitably or realistically distributed?	☐	☐
Was new information discovered about the risks or community that made implementation difficult or no longer sensible?	☐	☐
Was the estimated time of implementation reasonable?	☐	☐
Were sufficient resources (for example staff and technical assistance) available?	☐	☐

IF YES

What were the results of the implemented action? _____

	YES	NO
Were the outcomes as expected? If No, please explain:		
Did the results achieve the goal and objective(s)? Explain how:		
Was the action cost-effective? Explain how or how not:		
What were the losses avoided after having completed the project?		
If it was a structural project, how did it change the hazard profile?		
Additional comments or other outcomes:		

Date: _____

Prepared by: _____

Worksheet #4 Revisit Your Risk Assessment step 4

Risk Assessment Steps	Questions	YES	NO	COMMENTS
Identify hazards	Are there new hazards that can affect your community?			
Profile hazard events	Are new historical records available?			
	Are additional maps or new hazard studies available?			
	Have chances of future events (along with their magnitude, extent, etc.) changed?			
	Have recent and future development in the community been checked for their effect on hazard areas?			
Inventory assets	Have inventories of existing structures in hazard areas been updated?			
	Is future land development accounted for in the inventories?			
	Are there any new special high-risk populations?			
Estimate losses	Have loss estimates been updated to account for recent changes?			

If you answered "Yes" to any of the above questions, review your data and update your risk assessment information accordingly.

Worksheet #5 Revise the Plan step 4

Prepare to update the plan.

When preparing to update the plan:	*Check the box when addressed:*
1. Gather information, including project evaluation worksheets, progress reports, studies, related plans, etc.	
Comments:	
2. Reconvene the planning team, making changes to the team composition as necessary (see results from Worksheet #2).	
Comments:	

Consider the results of the evaluation and new strategies for the future.

When examining the community consider:	*Check the box when addressed:*
1. The results of the planning and outreach efforts.	
Comments:	
2. The results of the mitigation efforts.	
Comments:	

3. Shifts in development trends.	
Comments:	
4. Areas affected by recent disasters.	
Comments:	
5. The recent magnitude, location, and type of the most recent hazard or disaster.	
Comments:	
6. New studies or technologies.	
Comments:	
7. Changes in local, state, or federal laws, policies, plans, priorities, or funding.	
Comments:	

8. Changes in the socioeconomic fabric of the community.	
Comments:	
9. Other changing conditions.	
Comments:	

Incorporate your findings into the plan.

When examining the plan consider:	*Check the box when addressed:*
1. Revisit the risk assessment. *(See Worksheet #4)*	
Comments:	
2. Update your goals and strategies.	
Comments:	
3. Recalculate benefit-cost analyses of projects to prioritize action items.	
Comments:	

APPENDIX G: CRITICAL FACILITY INVENTORY

Due to the sensitive nature of this information, details of critical facilities have been redacted for the public document. A full list of critical facilities identified for the vulnerability analysis is available at the Seneca County Emergency Management Office. Contact the Seneca County Emergency Management Office Director, Melissa Taylor, to view the list.

APPENDIX H: RISK ASSESSMENT SUPPLEMENTARY DATA

This appendix contains information and details to support information provided in Chapters 6 through 13 (Hazard Profiles).

HISTORY OF HAZARD EVENTS WITHIN THE COUNTY

To supplement the information provided in this plan, events prior to the update of this plan are included below by hazard of concern type. Many sources provided historical information regarding previous occurrences and losses associated with hazards throughout New York and Seneca County. It is noted that, with a number of sources reviewed for the purpose of this HMP, loss and impact information for many events could vary depending on the sources.

For more information on past events and impacts, refer to the 2018 Seneca County Hazard Mitigation Plan.

Dam Failure

Known dam failure events that have impacted New York State and Seneca County between 2008 and 2017 are identified in Table H-1. Many sources were researched for historical information regarding dam failure events in Seneca County; therefore, Table H-1 may not include all dam failure events that have impacted the County.

Table H-1. Dam Failure Events in Seneca County Between 2008 and 2017

Date(s) of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
March 30, 2008	Dam Incident	N/A	No	Smoke condition in powerhouse due to problem with Unit #12.
March 31, 2008	Dam Incident	N/A	No	On March 31, 2008, the Licensee was contacted to confirm a report by the NYS Canal Corp that there was a fire at the Seneca Falls powerhouse. The Licensee's representative stated that a smoke condition occurred at one of the units during the morning of Sunday, March 30. Their operator was alerted to the situation and preceded to the powerhouse. The unit shut itself down automatically when this problem arose. It appears that there was a hot spot between the rotor and stator of this unit that caused the smoke condition. The Licensee stated that they also contacted the local fire department as a precaution. The other two units are operating properly and there is a cylinder gate that can be opened to release more flow from the reservoir. The Obermeyer gate on top of the spillway and the four bottom gate operated by the NYS Canal Corp are operable and not affected by the incident. The incident did not result in an uncontrolled release of water.

Sources: Stanford University 2018; Association of State Dam Safety Officials 2021
Notes:
N/A Not Applicable

NYS New York State

Drought

The drought hazard has not been profiled in previous updates of the Seneca County HMP; therefore, a historical collection of this information is unavailable.

Earthquake

Known earthquake events that have impacted New York State and Seneca County between 1857 and 2017 are identified in Table H-2. Many sources were researched for historical information regarding earthquake events in Seneca County; therefore, Table H-2 may not include all earthquake events that have impacted the County.

Table H-2. Earthquake Events in Seneca County Between 1972 and 2017

Date(s) of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
September 10, 2013	Earthquake	N/A	No	A magnitude 1.7 earthquake occurred 7 kilometers west-southwest of Lodi in Seneca Lake. The earthquake was 5.0 kilometers in depth.

Sources: USGS 2023

Extreme Temperature

Known extreme temperature events that have impacted New York State and Seneca County between 2000 and 2017 are identified in Table H-3. Many sources were researched for historical information regarding extreme temperature events in Seneca County; therefore, Table H-3 may not include all extreme temperature events that have impacted the County.

Table H-3. Extreme Temperature Events in Seneca County Between 2000 and 2017

Date(s) of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
September 28-29, 2000	Extreme Cold	N/A	No	On the evening of the 28th and the morning of the 29th a widespread killing freeze occurred across central New York. Observations had low temperatures below 30° F.
July 21-23, 2011	Extreme Heat	N/A	No	High temperatures across much of Seneca County rose to 90° F, with many areas exceeding 100° F.

Sources: FEMA 2023; NOAA NCEI 2023

Note (1): Monetary figures within this table were U.S. Dollar (USD) figures calculated during or within the approximate time of the event. If such an event would occur in the present day, monetary losses would be considerably higher in USDs as a result of increased U.S. Inflation Rates.

(2): Events without a narrative were not included in the table.

N/A Not Applicable

Flood

Known flood events that have impacted New York State and Seneca County between 1972 and 2017 are identified in Table H-4. Many sources were researched for historical information regarding flood events in Seneca County; therefore, Table H-4 may not include all flood events that have impacted the County.

Table H-4. Flood Events in Seneca County Between 1972 and 2017

Date(s) of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
June 23, 1972	Flood	DR-338-NY	Yes	Tropical Storm Agnes caused levels of all the Finger Lakes to be higher than any previously recorded, and extensive flooding of lakeside properties resulted.
January 19-20, 1996	Flash Flood	N/A	No	Heavy rain and melting snow caused flooding in communities across the County. There was a reported $500,000 in property damages incurred from this event.
April 30, 1996	Flash Flood	N/A	No	Showers and thunderstorms brought torrential rainfall to Seneca County. Up to one and a half inches of rain caused several streams and creeks to rise out of their banks. Many roads in Waterloo were also flooded. There was a reported $3,000 in property damages incurred from this event.
November 8-9, 1996	Flash Flood	N/A	No	Flash flooding paralyzed many communities in Seneca County. Dozens of roads were washed out and traffic was backed up for miles due to flooding. Many urban problems were caused by autumn leaves clogging ditches and storm sewers. Stream banks eroded, bridges and culverts washed out, and pipelines were exposed. There was a reported $100,000 in property damages incurred from this event.
July 31 - August 1, 2000	Flash Flood	N/A	No	Thunderstorms produced several reports of flooding, mainly in Fayette, Varick, Waterloo, Seneca Falls, and Romulus. Flood damage to crops was also reported. A health care facility in Waterloo was struck by lightning, forcing a switch to generator power. Backyards and basements were flooded throughout the region as was Route 98 near Deans Cove. There was no reported damages incurred from this event.
August 5-6, 2003	Flash Flood	N/A	No	Slow-moving thunderstorms produced flash flooding of numerous roads, culverts, and low-lying underpasses in southern Seneca County. A state of emergency was declared in Seneca County due to the flash flooding as many roads were either flooded or impassable. The flooding included the towns of Covert and Ovid, and the village of

Date(s) of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				Interlaken. There were several flooded basements in the town of Ovid. An estimated 3 to 4 inches of rain fell. There was a reported $100,000 in property damages incurred from this event.
May 13 - June 17, 2004	Flood	DR-1534-NY	Yes	Severe weather in the County caused flooding impacts.
July 14, 2004	Flash Flood	N/A	No	4 to 6 inches of rain fell causing ponding of water on roads and numerous flooded basements in several towns including Waterloo and Varick. There was a reported $5,000 in property damages incurred from this event.
April 2-3, 2005	Flash Flood	N/A	No	A slow-moving storm brought 1 to 4 inches of rain. Before this storm, the rivers and streams had high flows due to a previous rainstorm and snowmelt. There was some road closures and flooded basements. 1 road and 1 bridge were damaged. The hardest hit areas were Waterloo and Seneca Falls. Streams and creeks were out of their banks. There was a reported $50,000 in property damages incurred from this event.
May 14, 2014	Flash Flood	N/A	No	Thunderstorms produced 4 to 5 inches of rain over the central portion of Yates and Seneca counties. A road was washed out on County Route 131 in Ovid. There was a reported $15,000 in property damages incurred from this event.
August 3, 2014	Flash Flood	N/A	No	Thunderstorms with torrential downpours occurred across Seneca County. Water was flowing over numerous roads and into several basements throughout the central part of the county, including the hardest hit area of Fayette. There was a reported $135,000 in property damages incurred from this event.

Sources: FEMA 2023; NOAA NCEI 2023

Note (1): Monetary figures within this table were U.S. Dollar (USD) figures calculated during or within the approximate time of the event. If such an event would occur in the present day, monetary losses would be considerably higher in USDs as a result of increased U.S. Inflation Rates.

N/A Not Applicable

Landslide

The landslide hazard has not been profiled in previous updates of the Seneca County HMP; therefore, a historical collection of this information is unavailable.

Severe Weather

Known severe weather events that have impacted New York State and Seneca County between 1973 and 2017 are identified in Table H-5. Many sources were researched for historical information regarding severe weather

events in Seneca County; therefore, Table H-5 may not include all severe weather events that have impacted the County.

Table H-5. Severe Storm Weather in Seneca County Between 1973 and 2017

Date(s) of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
June 5, 1973	Thunderstorm	N/A	No	Several houses were struck by lightning. Winds downed several utility poles and trees, causing power failure and damage to property.
July 27, 1978	Thunderstorm, Hail	N/A	No	Thunderstorms brought high winds into the County, causing a 100-foot tree to crash onto a boat and producing further damages to seven properties. Hail up to 1 inch in diameter was reported.
October 25, 1980	Thunderstorm	N/A	No	High winds of up to 50 miles per hour were produced by a thunderstorm, downing power lines, which resulted in a house fire. Thousands were without power for multiple hours. Trees were uprooted and blocked roads.
July 18, 1982	Thunderstorm	N/A	No	A strong thunderstorm caused multiple fallen trees and broken power lines. There was a widespread blackout due to numerous powerlines being impacted. There were reports of slight damages to houses.
August 25, 1982	Thunderstorm	N/A	No	Strong winds from a thunderstorm downed trees and power lines. In Ovid, barns and shacks were destroyed.
June 16, 1983	Hail	N/A	No	Hail up to 1 inch in diameter was reported.
July 21, 1983	Thunderstorm	N/A	No	Thunderstorms with strong winds, accompanied by lightning, toppled many trees, broke power lines, and damaged a few homes. Large tree limbs blocked roads.
July 31, 1983	Thunderstorm	N/A	No	Strong winds and lightning toppled trees. A few homes were damaged. Electrical wires snapped and rendered hundreds without power for three hours or more.
August 1, 1983	Thunderstorm	N/A	No	Lightning and strong winds severed power lines; many communities were without electricity for various lengths of time.
September 11, 1984	Thunderstorm	N/A	No	A severe storm with high winds knocked down trees and power lines. The power outage lasted several hours. A few homes were damaged by falling trees. During the height of the storm, a motorist pulled off a street and parked near a tree; the tree was blown down and crushed the car's roof, resulting in one passenger injury.
August 7, 1986	Hail	N/A	No	Hail up to 1 inch in diameter was reported.

Date(s) of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
August 15, 1986	Thunderstorm	N/A	No	Thunderstorms toppled trees and snapped electrical lines.
August 17, 1987	Thunderstorm	N/A	No	Strong winds from a thunderstorm broke tree limbs and powerlines in Seneca County.
July 4, 1990	Thunderstorm	N/A	No	Severe thunderstorms downed trees and power lines. Falling trees and limbs damaged several homes and cars.
May 17, 1991	Thunderstorm	N/A	No	Severe thunderstorms uprooted trees and downed power lines.
June 12, 1991	Thunderstorm	N/A	No	Thunderstorms produced damaging winds and heavy downpours. Downed trees and power lines resulted in numerous power outages.
July 25, 1994	Hail	N/A	No	Hail up to .75 inches in diameter was reported.
May 10, 1996	Thunderstorm	N/A	No	Severe thunderstorms downed trees and wires in Waterloo and Seneca Falls and blew a shed into a truck. There was a reported $18,000 in property damages incurred from this event.
August 15, 1996	Thunderstorm	N/A	No	Severe thunderstorms moved across central Seneca county. These storms downed numerous trees and telephone poles in the town of Fayette. There was a reported $5,000 in property damages incurred from this event.
February 22, 1997	Thunderstorm	N/A	No	Strong, gusty winds associated with impending thunderstorms caused widespread power outages occurred in the late morning from downed trees and power lines. There was a reported $20,000 in property damages incurred from this event.
July 3, 1997	Thunderstorm	N/A	No	A thunderstorm quickly became severe over southern portions of Seneca county. Downed trees and wires were reported in the town of Ovid. There was a reported $10,000 in property damages incurred from this event.
July 27, 1997	Thunderstorm	N/A	No	An isolated thunderstorm reached severe levels briefly along Cayuga Lake in eastern portions of the county. Strong winds downed many trees and power lines. Falling tree limbs caused minor damage to some boats anchored near the docks. There was a reported $40,000 in property damages incurred from this event.
May 31 - June 2, 1998	Thunderstorm	N/A	No	A severe thunderstorm moved across the southern part of the County during the midafternoon. Large trees and power poles were blown down in Covert. Numerous trees and wires were downed in

Date(s) of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				Waterloo. There was a reported $65,000 in property damages incurred from this event.
September 6-7, 1998	Thunderstorm	N/A	No	Widespread wind damage occurred in the town of Waterloo and across Seneca Falls. Most of the damage was in the form of downed trees and power lines. Many roads in the center of Waterloo had to be closed due to fallen trees, live wires, and damaged traffic signals. In Seneca Falls, similar damage was reported. Trees was blown down on Cayuga Lake and inflicted damage on several small boats. Several vacation homes in this area incurred minor roof and siding damage from large tree limbs which succumbed to the wind. There was a reported $250,000 in property damages incurred from this event.
November 10, 1998	Thunderstorm	N/A	No	Strong gusts from a severe thunderstorm caused trees, large branches, and utility poles to come down on a widely scattered basis. There was a reported $10,000 in property damages incurred from this event.
July 9, 1999	Thunderstorm	N/A	No	Strong thunderstorm winds uprooted trees and caused power outages across the southern portion of the County. There was a reported $10,000 in property damages incurred from this event.
November 2-3, 1999	Thunderstorm	N/A	No	Strong winds from a severe thunderstorm caused widespread minor damages and power outages. There was a reported $33,000 in property damages incurred from this event.
July 14, 2000	Thunderstorm, Hail	N/A	No	Trees and wires were blown down by thunderstorm winds across the northern portion of Seneca county, mainly around Waterloo. 0.5-inch diameter hail was also reported.
July 31, 2000	Thunderstorm	N/A	No	Thunderstorm winds produced scattered reports of downed trees across Seneca County, mainly in Ovid, Romulus, Fayette, Varick, and Waterloo.
December 12, 2000	Thunderstorm	N/A	No	Winds associated with a thunderstorm produced wind gusts of 62 miles per hour. Numerous power lines and trees were brought down. Power outages were widespread. Other damage included roofs collapsed and blown off, signs were blown over, a mobile home was moved off its pad, a mobile home was flipped onto its side while being moved, a barn collapsed, a silo was damaged, and trees falling onto houses, cars, and wires. There was a reported $50,000 in property damages incurred from this event.
February 10, 2001	Thunderstorm	N/A	No	Thunderstorms produced fast moving, high winds which knocked down numerous trees and power lines resulting in thousands without power.

Date(s) of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
October 10, 2001	Thunderstorm, Hail	N/A	No	Thunderstorm knocked down trees and wires in Fayette and Varick. Dime sized hail was reported.
March 9, 2002	Thunderstorm	N/A	No	Severe thunderstorms scattered trees and small limbs down on power lines.
September 19, 2003	Thunderstorm, Hurricane	N/A	No	Remnants of Hurricane Isabel brought with it high winds. Scattered reports of trees and wires down were common. Tens of thousands of electric customers were without power. A few trees and wires fell on cars and houses, and closed roads. There was a reported $50,000 in property damages incurred from this event.
October 15, 2001	Thunderstorm	N/A	No	Severe weather caused numerous trees and power lines to be downed. A few trees fell on houses and cars. Tens of thousands of electric customers were without power. There was a reported $50,000 in property damages incurred from this event.
November 13, 2003	Thunderstorm	N/A	No	Severe weather caused tens of thousands of electric customers lost power due to wires and utility poles coming down. There was a reported $20,000 in property damages incurred from this event.
April 18, 2004	Thunderstorm	N/A	No	Thunderstorm winds blew down trees and wires especially on the east side of Seneca Lake. In Romulus a radio tower was bent over onto a building. Minor property damage occurred. Some utility poles were blown over or damaged. There was a reported $200,000 in property damages incurred from this event.
May 13 - June 17, 2004	Severe Weather	DR-1534-NY	Yes	Severe weather in the County caused flooding impacts.
December 23, 2004	Thunderstorm	N/A	No	Passing storms produced strong winds with gusts up to 50 mph downed trees, wires, and utility poles. The damage was isolated. There was a reported $5,000 in property damages incurred from this event.
June 8, 2007	Thunderstorm	N/A	No	Scattered showers and thunderstorms blew down trees and wires in the eastern portion of the County.
June 19, 2007	Thunderstorm	N/A	No	Showers and thunderstorms developed with numerous reports of large hail and wind damage. Trees were blown down in Interlaken and Trumansburg on the Seneca County side.
June 21, 2007	Thunderstorm, Hail, Tornado	N/A	No	Widespread severe thunderstorms developed, with many reports of large hail (up to 1 inch in diameter) and damaging winds. One thunderstorm produced a brief EF-1 tornado in Sheldrake, near the

Date(s) of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				northern end of Wyers Point Road, just east of State Route 89. Trees, wires, and utility poles were blown down county-wide. There was a reported $10,000 in property damages incurred from this event.
August 18, 2007	Thunderstorm, Hail	N/A	No	Showers and thunderstorms developed with numerous reports of large hail (0.75 inches) and wind damage from these thunderstorms.
August 16, 2007	Thunderstorm, Hail	N/A	No	Showers and thunderstorms developed with numerous reports of large hail (1.75 inches) and wind damage from these thunderstorms.
July 16, 2008	Thunderstorm, Hail	N/A	No	Showers and thunderstorms developed with numerous reports of large hail (0.88 inches) and wind damage from these thunderstorms.
July 26, 2008	Thunderstorm, Hail	N/A	No	Showers and thunderstorms developed with numerous reports of large hail (1.75 inches) and wind damage from these thunderstorms.
June 25-26, 2009	Thunderstorm, Hail	N/A	No	Showers and thunderstorms developed with numerous reports of large hail (1 inch) and wind damage from these thunderstorms.
October 7, 2009	Thunderstorm	N/A	No	Isolated thunderstorms caused scattered wind damage across the area. Trees and power lines were brought down. Schools were delayed due to power outages.
July 17, 2010	Thunderstorm	N/A	No	Showers and thunderstorms developed with numerous reports of large hail (1 inch) and wind damage from these thunderstorms.
July 21, 2010	Thunderstorm	N/A	No	Showers and thunderstorms developed with numerous reports of large hail (0.88 inch) and wind damage from these thunderstorms.
February 18-19, 2011	Thunderstorm	N/A	No	High winds occurred across the region with gusts between 50 and 60 miles per hour. Numerous trees were blown down and many customers were without power.
June 9, 2011	Thunderstorm	N/A	No	Showers and thunderstorms developed with numerous reports of large hail (1 inch) and wind damage from these thunderstorms.
May 29, 2012	Thunderstorm	N/A	No	Showers and thunderstorms developed with many storms becoming severe and producing large hail and damaging winds. A barn was destroyed with estimated wind speeds of 80 to 90 miles per hour in the Town of Fayette. Numerous tree branches were down, and some isolated areas had uprooted trees. The pattern of damage was consistent with a microburst in that the damage of the trees was laid out in a divergent or a fan shaped pattern.
September 8, 2012	Thunderstorm	N/A	No	Several storms produced damaging wind gusts. A barn was damaged in Lodi on Keady Road. A tin

Date(s) of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				roof was blown off the barn and landed in the road. A house was damaged due to numerous trees that fell on it.
May 21, 2013	Thunderstorm	N/A	No	A line of storms produced hail, along with wind damage. Trees reported down at the intersection of State Route 96 and Burgess Road in the Village of Waterloo. Numerous trees, power poles and electrical lines were blown down in and around Fayette by thunderstorm winds.
July 5, 2013	Thunderstorm	N/A	No	Severe thunderstorms caused several trees to be uprooted, including one fairly large walnut, corn flattened, and a six-inch diameter tree was snapped.
June 16, 2014	Thunderstorm	N/A	No	Severe thunderstorms caused trees to be blown down on Powell Road and Railroad Avenue in the Village of Interlaken. Pea size hail also fell.
June 8, 2015	Thunderstorm	N/A	No	Strong to severe thunderstorms developed and produced wind damage, causing trees and wires to fall down.
June 10, 2015	Thunderstorm	N/A	No	Strong to severe thunderstorms developed producing wind damage and small hail. Several trees fell across the County. Two homes were damaged due to falling trees in the Town of Romulus.
June 12, 2015	Thunderstorm	N/A	No	Showers and thunderstorms developed. These storms produced damaging winds and large hail and caused fallen trees.
August 4, 2017	Thunderstorm	N/A	No	A thunderstorm moved across the region and became severe. This thunderstorm produced severe winds and knocked over trees and wires in the vicinity of 2190 Lake Road.

Sources: FEMA 2023; NOAA NCEI 2023

Note (1): Monetary figures within this table were U.S. Dollar (USD) figures calculated during or within the approximate time of the event. If such an event would occur in the present day, monetary losses would be considerably higher in USDs as a result of increased U.S. Inflation Rates.

(2): Events without a narrative were not included in the table.

N/A Not Applicable

Severe Winter Weather

Known severe winter weather events that have impacted New York State and Seneca County between 1993 and 2017 are identified in Table H-6. Many sources were researched for historical information regarding severe winter weather events in Seneca County; therefore, Table H-6 may not include all severe winter weather events that have impacted the County.

Table H-6. Severe Winter Weather Events in Seneca County Between 1993 and 2017

Date(s) of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
March 13-17, 1993	Blizzard	EM-3107-NY	Yes	A nor'easter impacted much of the east coast. Snow totals ranged in Seneca County between 13 and 18 inches, and temperatures dropped in 5 degrees Fahrenheit.
January 2, 1996	Heavy Snow	N/A	No	A major winter storm with snowfall amounts of 8 to 12 inches was observed, but as much as 16 inches fell across the Finger Lakes.
March 6, 1996	Heavy Snow	N/A	No	A winter storm brought snowfall accumulations ranging from 6 to 12 inches. During the height of the storm, many accidents were reported due to poor visibility.
May 11, 1996	Winter Weather	N/A	No	A late season snowfall blanketed much of the region with 3 to 5 inches of wet, slushy snow.
November 26, 1996	Heavy Snow	N/A	No	A storm system brought a period of heavy wet snow to much of central New York. Amounts were heaviest from portions of the central southern tier across the Finger Lakes region and into the Mohawk Valley. Snow loading from the heavy wet nature of the snowfall resulted in downed power lines and isolated roof collapses.
January 2-3, 1999	Ice Storm	N/A	No	A mixture of snow, sleet, and freezing rain spread across the Finger Lakes. Freezing rain resulted in a substantial buildup of ice. Ice accumulations brought down trees and power lines. Power outages were widespread. Department of Transportation and State Police officials reported treacherous travel conditions.
January 8-9, 1999	Winter Storm	N/A	No	Snow fell over much of central New York. The heaviest and steadiest snow fell from the Finger Lakes. A stripe of 4-to-7-inch amounts extended from Auburn and Seneca Falls in the Finger Lakes east to Sherburne, Cooperstown, Cortland, and Utica in the northern Susquehanna and Mohawk Valley regions. Many areas received a thin glaze of ice on top of already fallen snow as the snow changed to sleet, freezing rain, and even light rain overnight.
January 13-15, 1999	Winter Storm	N/A	No	Steady and heavy snow at times affected the County. Snowfall rates of 1 to 2 inches per hour were observed on occasion. Storm total snow accumulations ranged from 6 to 12 inches.
March 6-7, 1999	Heavy Snow	N/A	No	Snow accumulations reached well over a foot throughout much of the Finger Lakes.
January 12, 2000	Heavy Snow	N/A	No	5 to 8 inches of snow fell over the Finger Lakes, Central Southern Tier, Susquehanna Region and Western Catskills. Many automobile accidents were

Date(s) of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				reported throughout the region, but none were serious. Numerous schools closed.
January 20, 2000	Heavy Snow	N/A	No	6 to 7 inches of snow fell in in the region. Scores of motor vehicle accidents were reported, including one fatality. There were also a number of school closings.
January 25-16, 2000	Heavy Snow	N/A	No	A winter storm produced 3 to 6 inches of snow in Yates, Seneca, Steuben and northern Oneida counties.
January 30-31, 2000	Heavy Snow	N/A	No	Snowfall totals ranged from 3 to 8 inches in the western Mohawk Valley, central Southern Tier, and Finger Lakes region of central New York.
February 13, 2000	Ice Storm	N/A	No	Ice accumulations generally between a quarter to a half an inch were observed. There were numerous automobile accidents, but no serious injuries reported. Many area schools were closed or delayed.
February 18-19, 2000	Heavy Snow	N/A	No	Snow began to mix with or change over to freezing rain and sleet, adding a coating of ice to the snowpack. The heaviest snow (5 to 10 inches) fell over the Finger Lakes, western Mohawk Valley, Susquehanna Region and northern Oneida county. Many motor vehicle accidents were reported throughout the area, but most were minor. Schools were once again closed in some of the districts due to the inclement weather.
February 25, 2001	Ice Storm	N/A	No	Snow and sleet changed to freezing rain in the central southern tier and finger lakes. Water equivalent amounts of the freezing rain were between a quarter and a half of an inch.
March 4-6, 2001	Heavy Snow	N/A	No	A winter storm moved slowly north along the east coast of the United States. The snow reached the Finger Lakes and Mohawk Valley and fell continuously for two days. Snowfall totals were 10 to 30 inches.
March 16-18, 2001	Heavy Snow	N/A	No	Snowfall amounts at the higher elevations were 6 to 12 inches from northeast Steuben County east to southern Seneca County and northeast Schuyler County.
January 31, 2002	Winter Storm	N/A	No	Precipitation started as snow then changed over to sleet then freezing rain then finally rain. Steady freezing rain, at times moderate, fell during the daytime. Ice accumulations up to half an inch. Total water equivalents were over one inch in the Finger Lakes.
December 25, 2002	Heavy Snow	N/A	No	Snowfall amounts in the Finger Lakes and Chemung Valley were 6 to 12 inches. Due to the snow amounts and snowfall rates the New York

Date(s) of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				State Thruway closed for part of the evening. The heavy snow also caused power outages. Many counties declared state of emergencies.
January 3-4, 2003	Heavy Snow	N/A	No	A slow-moving nor'easter produced snowfall amounts between 8 to 14 inches in the central southern tier, Finger Lakes region, and northern Oneida County. The weight of the snow combined with the weight of ice caused additional power outages. At least 20,000 customers were without power at some time. Some customers were without power for up to a week. Emergency shelters were set up in some areas. All the major roads had motor vehicle accidents. Some were serious enough to close the interstate highways.
February 17, 2003	Heavy Snow	N/A	No	Snowfall amounts were a widespread 10 to 20 inches. Accidents were fewer due to the Presidents Day holiday and due to the early start of the snow.
April 3-5, 2003	Ice Storm	DR-1467-NY	Yes	An ice storm affected the County April 3 to April 5 as sleet and freezing rain reports were common. Most ice accumulations occurred on elevated surfaces, such as trees and powerlines. Tree damage and power outages occurred.
December 14-15, 2003	Heavy Snow	N/A	No	A widespread 8-to-12-inch snow event occurred across south central New York. Across south central New York, sleet and freezing rain mixed in. The snow caused numerous automobile accidents and closed schools.
February 3, 2004	Heavy Snow	N/A	No	Snowfall amounts were mostly 4 to 8 inches. The highest amounts were at the highest elevations. In the valleys snow amounts were cut by some rain, freezing rain, and sleet. Snow to water ratios were around 10 to 1. Numerous accidents occurred in the afternoon and evening when people tried to return home from work.
March 16-17, 2004	Heavy Snow	N/A	No	Snow started between 5 and 9 AM on the 16th. The snow had some effect on the morning commute. The snow was at its heaviest from the late morning into the afternoon on the 16th. This snow intensity hindered drivers getting home during the afternoon and early evening. The snow was a widespread 8 to 11 inches.
January 22-23, 2005	Heavy Snow	N/A	No	A winter storm brought a widespread snow. Snowfall amounts were 8 to 20 inches. Despite occurring on a weekend, it still caused major travel problems. It was also unusual in that most temperatures during the event were between 0 and 15 above zero Fahrenheit.
March 1, 2005	Heavy Snow	N/A	No	A strong winter storm brought 8 to 14 inches of snow to all central New York. Isolated snow amounts were as much as two feet.

Date(s) of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
October 25, 2005	Winter Weather	N/A	No	Snow fell mainly over the higher elevations of central New York and the Catskills. Across the Central Southern Tier, and the Finger Lakes region, the valleys saw rain with the higher terrain, above 1600 feet, seeing only a few inches of snow.
January 15, 2007	Ice Storm	N/A	No	A mix of snow and sleet changed to freezing rain across most of the area during the morning. The precipitation changed over to all rain across the Finger Lakes and south-central New York around midday. Total ice accumulations ranged from one-half to three-quarters of an inch in many locations. The weight of the ice brought down trees and power lines in scattered localities. Roads also became very slippery, and travel was impacted.
February 13-15, 2007	Winter Storm	N/A	No	Snow became heavy with near blizzard conditions at times over the Finger Lakes and central southern tier of New York. Gusty winds to 40 mph developed behind the storm which led to considerable blowing and drifting snow. This hampered snow plowing and snow cleanup operations. As a result, many roads and highways were closed during the height of the snowstorm. Many counties and municipalities declared snow emergencies. Storm total snowfall amounts across much of central New York ranged between 15 and 30 inches. The weight of the snow caused several roofs to collapse.
April 15-16, 2007	Winter Storm	N/A	No	A major spring storm brought about 12 inches of snow to the county. The snow was heavy and wet bringing down many trees and power lines causing scattered power outages.
December 15-17, 2007	Winter Storm	N/A	No	A mix of precipitation across the county was followed by heavy wrap-around snow. Snowfall totals up to one foot were measured.
February 26-27, 2008	Winter Storm	N/A	No	Snowfall amounts across the county averaged around 7 inches.
March 4, 2008	Ice Storm	N/A	No	Several locations from the Finger Lakes region to the central southern tier of New York received one half inch of ice, bringing down trees and power lines.
March 7-9, 2008	Ice Storm	N/A	No	A major ice storm occurred across much of the Finger Lakes Region of New York, with mainly snow north of here, and heavy rain to the south. Ice accumulations ranged from one half to three quarters of an inch bringing down many trees and power lines in the Finger Lakes region.
December 19, 2008	Winter Storm	N/A	No	As much as 11 inches of snow fell across parts of the county, with general snowfall amounts averaging 5 to 9 inches.

Date(s) of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
December 31, 2008	Winter Storm	N/A	No	Snow amounts ranging from 5 to 10 inches across much of the Finger Lakes region.
January 27-28, 2009	Winter Storm	N/A	No	A winter storm brought snowfall amounts of 6 to 8 inches to the county.
February 25-26, 2010	Winter Storm	N/A	No	Heavy snow fell across the county, with amounts ranging from 10 to 15 inches.
December 4-8, 2010	Lake-effect Snow	N/A	No	Persistent lake effect snow bands brought very heavy snow to much of the county.
February 25, 2011	Winter Storm	N/A	No	Snowfall totals across the county ranged from 6 to 10 inches.
March 6-7, 2011	Heavy Snow	N/A	No	Snowfall totals across the county ranged generally from 6 to 12 inches.
December 26-27, 2012	Winter Storm	N/A	No	Snowfall amounts across the county ranged from 6 to 8 inches.
January 1-3, 2014	Winter Storm	N/A	No	Snowfall amounts ranged from 9-10 inches across the county. Windy conditions resulted in significant blowing snow and cold temperatures.
February 5, 2014	Winter Storm	N/A	No	Snowfall amounts ranged from 8-10 inches across the county.
March 12-13, 2014	Winter Storm	N/A	No	Snowfall amounts averaged around 7 inches across the county. The highest amount of 7.2 inches fell 2 miles west-southwest of Ovid.
December 10-11, 2014	Winter Storm	N/A	No	Snowfall amounts ranged from 9-14 inches across the county. The highest amount of 14 inches fell in Seneca Falls.
February 1-2, 2015	Heavy Snow	N/A	No	Snowfall of 6 to 12 inches occurred with this winter storm.
November 19-22, 2016	Lake-effect Snow	N/A	No	Snowfall totals ranged from 8 to 16 inches in the south, to between 1 and 2 feet in the north.
March 14-15, 2017	Heavy Snow	N/A	No	Snowfall ranged between 11 and 21 inches in Seneca County.

Sources: FEMA 2023; NOAA NCEI 2023

Note (1): Monetary figures within this table were U.S. Dollar (USD) figures calculated during or within the approximate time of the event. If such an event would occur in the present day, monetary losses would be considerably higher in USDs as a result of increased U.S. Inflation Rates.

(2): Events without a narrative were not included in the table.

N/A Not Applicable

APPENDIX I: MITIGATION STRATEGY SUPPLEMENTARY DATA

This appendix summarizes additional activities and resources provided to plan participants to support the update of the mitigation strategy.

2018 GOALS AND OBJECTIVES REVIEW

Seneca County's planning documents and recent policies changes were reviewed and discussed with the Planning Team to help inform the review and update of the goals and objectives. Table I-1 and Table I-2 summarize the goals and objectives for the 2025 HMP update, respectively.

Table I-1. 2025 Goals

Goal Number	2025 Goals
1	Protect life, property, and the environment from current and future impacts.
2	Coordinate hazard mitigation programs and other planning efforts that affect the County.
3	Increase public preparedness and awareness of natural hazards.
4	Enhance mitigation capabilities to reduce hazard vulnerabilities.
5	Support continuity of operations pre-, during, and post-hazard events.
6	Reduce the risk of natural hazards for socially vulnerable populations and underserved communities.
7	Address long-term vulnerabilities from High Hazard Dams.

Table I-2. 2025 Objectives

Objective Number	2025 Objectives
1	Reduce the impact of disasters on currently developed property, especially residential, commercial, and critical public facilities that are near the lake shores and canal corridor.
2	Improve the stability of creek banks and improve the water flow of creek beds to lessen flooding events.
3	Lessen the impact of flooding on roads.
4	Use the community's land use plans, ordinances, subdivision regulations and site plan review processes to enhance loss reduction.
5	Ensure that future development is not vulnerable to the impact of natural, technological, or man-made disasters.
6	Coordinate and integrate the hazard mitigation activities with existing local Emergency Service Agencies Emergency Operations Plans.
7	Analyze the need for and procure any specialized equipment or training to enhance the Emergency Services response to specific hazards.
8	Review current evacuation routes to determine if they are adequate.
9	Ensure that county residents and businesses are aware of potential hazards and are knowledgeable of their roles in limiting the effects of hazards on their personal property, health, and safety.
10	Use appropriate public information and education strategies to increase public awareness of various hazard mitigation options.
11	Continue to educate the public about emergency preparedness, response, and recovery activities.
12	Encourage all residents and businesses to purchase NOAA Weather radios for timely alert warnings.

Objective Number	2025 Objectives
13	Reduce the possibility of damage and losses due to natural hazards affecting the county and its municipalities.
14	Increase communications before, during, and after natural hazard events.
15	Retrofit, acquire, or relocate vulnerable property in high hazard areas including those known to be subject to repetitive damages.
16	Utilize the best available information on hazard exposure and vulnerability to support appropriate land use decisions within Seneca County.
17	Increase local government official awareness regarding funding opportunities for mitigation and participating/contributing to plan updates.
18	Identify, and provide additional resources to, vulnerable and marginalized populations that have reduced capacity to respond to hazards compared with the general population.
19	Ensure dam infrastructure is maintained.
20	Support the identification and access to funding to repair/replace dams.
21	Ensure Emergency Action Plans are developed and updated.
22	Acquire and maintain detailed data regarding critical facilities and lifelines such that these sites can be prioritized and risk-assessed for possible mitigation actions.
23	Support increased participation in the National Flood Insurance Program and Community Rating System.
24	Promote sustainable and equitable land development practices that direct future development away from vulnerable areas.
25	Encourage and support multi-jurisdictional mitigation projects that leverage funding and support from multiple levels of government and community organizations.
26	Strengthen inter-jurisdiction and inter-agency communication, coordination, and partnerships to foster hazard mitigation actions and/or projects.
27	Encourage the establishment of policies to help ensure the prioritization and implementation of mitigation actions and/or projects designed to benefit essential facilities, services, and infrastructure.
28	Encourage residents to register their Cell phone numbers with the county's Hyper-Reach alert system.

MITIGATION STRATEGY WORKSHOP RESOURCES

In September 2024, a Mitigation Strategy Workshop was held for all plan participants. The workshop was held in-person at the Seneca County Emergency Management (1 Dipronio Dr, Waterloo, NY 13165) and was led by the contract consultant. Following the meeting, participating jurisdictions had the opportunity to work in-person with the contracting consultant. Furthermore, this meeting was supplemented by emails and phone calls between Seneca County and the contract consultant, for all participants to support the development of focused problem statements based on the impacts of natural hazards in the county and their communities. These problem statements were intended to provide a detailed description of the problem area, including its impacts to the jurisdiction; past damages; loss of service; etc. An effort was made to include the street address of the property/project location, adjacent streets, water bodies, and well-known structures as well as a brief description of existing conditions (topography, terrain, hydrology) of the site. These problem statements formed a bridge between the hazard risk assessment which quantifies impacts to each community with the development of actionable mitigation strategies. Resources available at the workshop and follow up discussions included the following to assist with the identification of mitigation alternatives and the development of the mitigation strategy workshops found in Section 9 (Annexes).

- FEMA Local Mitigation Handbook

- Public Survey Results
- FEMA Mitigation Action Types (Table I-3)
- FEMA Mitigation Ideas
- FEMA Project Useful Life Factsheet
- Mitigation Funding Sources at the Federal, State, and Local levels (Table I-4)
- FEMA Region 2 Funding Sources for New York
- FEMA Ecosystem Services
- Mitigation Catalog

TYPES OF MITIGATION ACTIONS

A mitigation action is a specific action, project, activity, or process taken to reduce or eliminate long-term risk to people and property from hazards and their impacts. Implementing mitigation actions helps achieve the plan's mission and goals. The actions to reduce vulnerability to threats and hazards form the core of the plan and are a key outcome of the planning process.

The primary types of mitigation actions to reduce long-term vulnerability are:

- Local Plans and Regulations (LPR)
- Structure and Infrastructure Projects (SIP)
- Natural Systems Protection (NSP)
- Education and Awareness Programs (EAP)

Table I-3. FEMA Mitigation Action Types

Mitigation Type	Description	Examples
Local Plans and Regulations	These actions include government authorities, policies, or codes that influence the way land and buildings are developed and built.	• Comprehensive plans • Land use ordinances • Subdivision regulations • Development review • Building codes and enforcement • NFIP Community Rating System • Capital improvement programs • Open space preservation • Stormwater management regulations and master plans
Structure and Infrastructure Projects	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. Many of these types of actions are projects eligible for funding through the FEMA Hazard Mitigation Assistance program.	• Acquisitions and elevations of structures in flood prone areas • Utility undergrounding • Structural retrofits • Floodwalls and retaining walls • Detention and retention structures • Culverts • Safe rooms

Mitigation Type	Description	Examples
Natural Systems Protection	These are actions that minimize damage and losses and also preserve or restore the functions of natural systems.	• Sediment and erosion control • Stream corridor restoration • Forest management • Conservation easements • Wetland restoration and preservation
Education and Awareness Programs	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 or Firewise Communities. Although this type of mitigation reduces risk less directly than structural projects or regulation, it is an important foundation. A greater understanding and awareness of hazards and risk among local officials, stakeholders, and the public is more likely to lead to direct actions.	• Radio or television spots • Websites with maps and information • Real estate disclosure • Presentations to school groups or neighborhood organizations • Mailings to residents in hazard-prone areas • StormReady • Firewise Communities

POTENTIAL MITIGATION FUNDING SOURCES

While it is important to recognize the mitigation strategies for Seneca County to help achieve the mitigation goals and objectives of the HMP, it is also important to provide sources for funding to implement these strategies. The table below provides a list of programs, descriptions, and links for those seeking funding sources. Please note that this table is not intended to be a comprehensive list, but rather a starting point to help identify potential sources of funding for the identified mitigation strategies.

Table I-4. New York Mitigation Funding Sources

Program	Description	Lead Agency	Website
Federal			
Hazard Mitigation Assistance (HMA)	Grants to provide funding for eligible mitigation activities that reduce disaster losses and protect life and property from future disaster damages – includes FMA, HMGP, PDM	FEMA	https://www.fema.gov/hazard-mitigation-assistance
Flood Mitigation Assistance (FMA)	Program Grants to States and communities for pre-disaster mitigation planning and projects to help reduce or eliminate the long-term risk of flood damage to structures insurable under the National Flood Insurance Program	FEMA	https://www.fema.gov/flood-mitigation-assistance-grant-program
Hazard Mitigation Grant Program (HMGP)	Grants to States and communities for planning and projects providing long-term hazard mitigation measures following a major disaster declaration	FEMA	https://www.fema.gov/hazard-mitigation-grant-program
Building Resilient Infrastructure and Communities (BRIC)	Supports states, local communities, tribes, and territories to undertake hazard mitigation projects by reducing the risks they face from disasters and natural hazards. BRIC is a new FEMA pre-disaster hazard mitigation program that replaces the existing Pre-Disaster Mitigation (PDM) program.	FEMA	https://www.fema.gov/grants/mitigation/building-resilient-infrastructure-communities
Individual Assistance	FEMA's Individual Assistance (IA) program provides financial assistance and direct services to eligible individuals and households who have uninsured and underinsured necessary expenses and serious needs. FEMA makes these funds available after any major disaster declarations and some programs available under emergency declarations. IA supports seven types of activities through the following programs: Mass Care/Emergency Services, Individuals and Households Program, Disaster Case Management, Crisis Counseling Assistance and Training Program, Disaster Legal Services, Disaster Unemployment Assistance, and Voluntary Agency Coordination.	FEMA	https://www.fema.gov/individual-disaster-assistance
Public Assistance	FEMA's Public Assistance (PA) provides cost reimbursement aid to local governments (state, county, local, municipal authorities, and school districts) and certain non-profit agencies that were involved in disaster response and recovery programs or that suffered loss or damage to facilities or property used to deliver government-like services. This program is largely funded by FEMA with both local and state matching contributions required.	FEMA	https://www.fema.gov/public-assistance-local-state-tribal-and-non-profit

Program	Description	Lead Agency	Website
Assistance to Firefighters Grant Program	The primary goal of the Assistance to Firefighters Grants (AFG) is to enhance the safety of the public and firefighters with respect to fire-related hazards by providing direct financial assistance to eligible fire departments, nonaffiliated Emergency Medical Services organizations, and State Fire Training Academies. This funding is for critically needed resources to equip and train emergency personnel to recognized standards, enhance operations efficiencies, foster interoperability, and support community resilience.	FEMA	https://www.fema.gov/welcome-assistance-firefighters-grant-program
High Hazard Potential Dams (HHPD) Rehabilitation Grant	The Rehabilitation of High Hazard Potential Dams Grant Program (HHPD provides technical, planning, design, and construction assistance in the form of grants to non-Federal governmental organizations or nonprofit organizations for rehabilitation of eligible high hazard potential dams.	FEMA	https://www.grants.gov/web/grants/view-opportunity.html?oppId=316238
Fire Management Assistance Grant Program	Assistance for the mitigation, management, and control of fires on publicly or privately-owned forests or grasslands that threaten such destruction as would constitute a major disaster. Provides a 75% Federal cost share and the State pay the remaining 25% for actual cost.	FEMA	https://www.fema.gov/fire-management-assistance-grant-program
Disaster Housing Program	Emergency assistance for housing, including minor repair of home to establish livable conditions, mortgage, and rental assistance	HUD	https://www.hud.gov/program_offices/public_indian_housing/publications/dhap
HOME Investment Partnerships Program	Grants to local and state government and consortia for permanent and transitional housing, (including financial support for property acquisition and rehabilitation for low-income persons)	HUD	https://www.hud.gov/program_offices/comm_planning/affordablehousing/programs/home/
HUD Disaster Recovery Assistance	Grants to fund gaps in available recovery assistance after disasters (including mitigation)	HUD	https://www.hud.gov/info/disasterresources
Section 108 Loan Guarantee	Enables states and local governments participating in the Community Development Block Grant (CDBG) program to obtain federally guaranteed loans for disaster-distressed areas	HUD	https://www.hudexchange.info/programs/section-108/
Smart Growth Implementation Assistance (SGIA) program	The SGIA program focuses on complex or cutting-edge issues, such as stormwater management, code revision, transit-oriented development, affordable housing, infill development, corridor planning, green building, and climate change. Applicants can submit proposals under 4 categories: community resilience to disasters, job creation, the role of manufactured homes in sustainable neighborhood design or medical and social service facilities siting.	EPA	https://www.epa.gov/smartgrowth
Partners for Fish and Wildlife	Financial and technical assistance to private landowners interested in pursuing restoration projects affecting wetlands and riparian habitats	U.S. Fish and Wildlife Service	https://www.fws.gov/partners/

Program	Description	Lead Agency	Website
Federal Highway Administration Emergency Relief	Fund for the repair or reconstruction of Federal-aid highways that have suffered serious damage as a result of (1) natural disasters or (2) catastrophic failures from an external cause	U.S. Department of Transportation (DOT)	https://www.fhwa.dot.gov/programadmin/erelief.cfm
Transportation Investment Generating Economic Recovery (TIGER)	Investing in critical road, rail, transit, and port projects across the nation	U.S. DOT	https://www.transportation.gov/tags/tiger-grants
Community Facilities Direct Loan & Grant Program	This program provides affordable funding to develop essential community facilities in rural areas. An essential community facility is defined as a facility that provides an essential service to the local community for the orderly development of the community in a primarily rural area, and does not include private, commercial, or business undertakings.	USDA	https://www.rd.usda.gov/programs-services/community-facilities-direct-loan-grant-program
Emergency Loan Program	USDA's Farm Service Agency (FSA) provides emergency loans to help producers recover from production and physical losses due to drought, flooding, other natural disasters, or quarantine	USDA	https://www.fsa.usda.gov/programs-and-services/farm-loan-programs/emergency-farm-loans/index
Emergency Watershed Protection (EWP) Program	Provide assistance to relieve imminent hazards to life and property caused by floods, fires, drought, windstorms, and other natural occurrences	NRCS	https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/landscape/ewpp/
Financial Assistance	Financial assistance to help plan and implement conservation practices that address natural resource concerns or opportunities to help save energy, improve soil, water, plant, air, animal and related resources on agricultural lands and non-industrial private forest land	NRCS	https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/
Emergency Management Performance Grants (EMPG) Program	Assist local, tribal, territorial, and state governments in enhancing and sustaining all-hazards emergency management capabilities	FEMA, U.S. DHS	https://www.fema.gov/emergency-management-performance-grant-program
Reimbursement for Firefighting on Federal Property	Provides reimbursement only for direct costs and losses over and above normal operating costs.	U.S. DHS	https://www.usfa.fema.gov/grants/firefighting_federal_property.html
Department of Homeland Security Grant Program (HSGP)	HSGP is composed of three interconnected grant programs including the State Homeland Security Program (SHSP), Urban Areas Security Initiative (UASI), and the Operation Stonegarden (OPSG). Together, these competitive grant programs fund a range of preparedness activities, including planning, organization, equipment purchase, training, exercises, and management and administration.	U.S. DHS	https://www.dhs.gov/homeland-security-grant-program-hsgp
Land & Water Conservation Fund	Matching grants to states and local governments for the acquisition and development of public outdoor recreation areas and facilities (as well as funding for shared federal land acquisition and conservation strategies)	National Park Service	https://www.nps.gov/subjects/lwcf/index.htm

Program	Description	Lead Agency	Website
Land and Water Conservation Fund	Funding to states, local and conservation organizations for outdoor recreational development, renovation, land acquisition, and planning.	U.S. Department of the Interior	https://www.doi.gov/lwcf
Small Business Administration Loan	Small Business Administration (SBA) provides low-interest disaster loans to homeowners, renters, business of all sizes, and most private nonprofit organizations. SBA disaster loans can be used to repair or replace the following items damaged or destroyed in a declared disaster: real estate, personal property, machinery and equipment, and inventory and business assets.	Small Business Administration (SBA)	https://www.sba.gov/funding-programs/disaster-assistance
Community Development Block Grant Program	Community Development Block Grants (CDBG) are federal funds intended to provide low- and moderate-income households with viable communities, including decent housing, a suitable living environment, and expanded economic opportunities. Eligible activities include community facilities and improvements, roads and infrastructure, housing rehabilitation and preservation, development activities, public services, economic development, and planning and administration. Public improvements could include flood and drainage improvements. In limited instances and during the times of "urgent need" (e.g., post-disaster) as defined by the CDBG National Objectives, CDBG funding could be used to acquire a property located in a floodplain that was severely damaged by a recent flood, demolish a structure severely damaged by an earthquake, or repair a public facility severely damaged by a hazard event.	U.S. Department of Housing and Urban Development	https://www.hudexchange.info/programs/cdbg-entitlement/
Federal Transit Administration—Emergency Relief	Federal Transit Authority Emergency Relief is a grant program that funds capital projects to protect, repair, reconstruct, or replace equipment and facilities of public transportation systems.	Federal Transit Authority at the U.S. DOT	https://www.transit.dot.gov/funding/grant-programs/emergency-relief-program/emergency-relief-program
State, Local, and Private			
Acres for America	The National Fish and Wildlife Foundation's Acres for America program works to permanently conserve wildlife habitat. Since 2005, the Acres for America program has conserved almost 1.5 million acres across the United States and provided almost $4 million in emergency funding to protect fish and wildlife after the 2010 Gulf of Mexico oil spill and Hurricane Sandy. The Acres for America program prioritizes conserving critical wildlife habitats, minimizing habitat fragmentation, providing public access, and maintaining natural resource-based economic activities. Eligible projects conserve a substantial amount of land and/or land of critical importance to its region. The program prioritizes applications for projects that are endorsed by national, state, and/or nonprofit entities as being a conservation priority.	National Fish and Wildlife Foundation	https://www.nfwf.org/programs/acres-america-program

Program	Description	Lead Agency	Website
Environmental Protection Fund: Local Waterfront Revitalization Program Grants	The NYS Department of State awards funding to local governments to revitalize coasts and inland waterways by preparing, updating, or implementing an LWRP. LWRPs serve as an opportunity to plan for coastal climate resilience to flooding, sea level rise, and storm surge via natural resource protection and waterfront land use.	NYS Department of State	https://dos.ny.gov/local-waterfront-revitalization-program
Partners for Places Funding Program	The Partners for Place program supports local government efforts toward climate preparedness and mitigation in the United States and Canada. Funding is given to teams including at least one local government sustainability office and one local place-based foundation.	Funders' Network for Smart Growth and Livable Communities and the Urban Sustainability Directors Network	https://www.fundersnetwork.org/partners-for-places/
Climate Adaptation Fund	The Wildlife Conservation Society's Climate Adaptation Fund provides grant awards to conservation non-profits across the United States to catalyze innovative, science-driven projects responding to the impacts of climate change on wildlife and people.	Wildlife Conservation Society	https://www.wcsclimateadaptationfund.org/

MITIGATION CATALOG

The tables below provide a list of potential personal, corporate, and government scale mitigation actions for each of the identified natural hazards in the Seneca County HMP. Please note that these tables are not intended to be a comprehensive list, but rather a starting point to help identify potential actions for participating jurisdictions. This catalog of potential actions was provided to participating jurisdictions at the Mitigation Strategy Workshop.

Table I-5. Seneca County Mitigation Catalog

DAM FAILURE		
Personal Scale	**Corporate Scale**	**Government Scale**

• Manipulate the hazard:
  • None
• Reduce exposure to the hazard:
  • Relocate out of dam failure inundation areas.
• Reduce vulnerability to the hazard:
  • Elevate home to appropriate levels.
• Increase Capability:
  • Learn about risk reduction for the dam failure hazard.
  • Learn the evacuation routes for a dam failure event.
  • Educate yourself on early warning systems and the dissemination of warnings.
	• Manipulate the hazard:
	  • Remove dams.
	  • Harden dams.
	• Reduce exposure to the hazard:
	  • Replace earthen dams with hardened structures.
	  • Relocate facilities out of dam failure inundation areas.
	• Reduce vulnerability to the hazard:
	  • Floodproof facilities within dam failure inundation areas.
	• Increase Capability:
	  • Educate employees on the probable impacts of a dam failure.
	  • Develop a continuity of operations plan.
		• Manipulate the hazard:
		  • Remove dams.
		  • Harden dams.
		• Reduce exposure to the hazard:
		  • Replace earthen dams with hardened structures.
		  • Relocate critical facilities out of dam failure inundation areas.
		  • Consider open space land use in designated dam failure inundations areas.
		• Reduce vulnerability to the hazard:
		  • Adopt higher floodplain standards in mapped dam failure inundation areas.
		  • Retrofit critical facilities within dam failure inundation areas.
		• Increase Capability:
		  • Map dam failure inundation areas.
		  • Enhance emergency operations plans to include a dam failure component.
		  • Institute monthly communications checks with dam operators.
		  • Inform the public on risk reduction techniques.
		  • Adopt real-estate disclosure requirements for the re-sale of property located within dam failure inundation areas.

DAM FAILURE		
Personal Scale	Corporate Scale	Government Scale
		• Consider the probable impacts of climate change in assessing the risk associated with the dam failure hazard. • Establish early warning capability downstream of listed high-hazard dams. • Consider the residual risk associated with protection provided by dams in future land use decisions.

DROUGHT		
Personal Scale	**Corporate Scale**	**Government Scale**

• Manipulate the Hazard:
  • None
• Reduce exposure to the hazard:
  • Consider stored water/captured water techniques during dry seasons.
  • Establishing an irrigation time/scheduling program or process so that all agricultural land gets the required amount of water. Through incremental timing, each area is irrigated at different times so that all water is not consumed at the same time. Spacing usage may also help with recharge of groundwater.
• Reduce vulnerability to the hazard:
  • Drought resistant landscapes.
  • Reduce water system losses.
  • Regularly check for leaks to minimize water supply losses.
  • Install low-flow water saving showerheads and toilets.
  • Turn water flow off while brushing teeth or during other cleaning activities.
  • Adjust sprinklers to water the lawn and not the sidewalk or street.
  • Run the dishwasher and washing machine only when they are full.
  • Check for leaks in plumping or dripping faucets.
  • Install rain-capturing devices for irrigation.
  • Install graywater systems in homes to encourage water reuse.
  • Rotate crops by growing a series of different types of crops on the same fields every season to reduce soil erosion.
  • Planting “cover crops,” such as oats, wheat, and buckwheat, to prevent soil erosion.
• Increase Capability:
	• Manipulate the Hazard:
	  • None
	• Reduce exposure to the hazard:
	  • Consider stored water/captured water techniques during dry seasons.
	• Reduce vulnerability to the hazard:
	  • Drought resistant landscapes.
	  • Reduce private water system losses.
	  • Identify alternate water supply sources.
	  • Install low-flow water saving showerheads and toilets.
	  • Adjust sprinklers to water the lawn and not the sidewalk or street.
	• Increase Capability:
	  • Practice active water conservation.
	  • Develop a COOP.
	  • Create a water conservation plan.
		• Manipulate the Hazard:
		  • Ground Water Recharge through stormwater management.
		  • Implement cloud seeding techniques during dry seasons.
		• Reduce exposure to the hazard:
		  • Identify and create ground water back up sources.
		  • Create /identify new impounded water supply points.
		  • Developing new or upgrading existing water delivery systems to eliminate breaks and leaks.
		• Reduce vulnerability to the hazard:
		  • Water use conflict regulations.
		  • Reduce water system losses.
		  • Distribute water saving kits.
		  • Identify sites ideally suited for ground water recharge.
		  • Implement stormwater retention in regions ideally suited for groundwater recharges.
		  • Utilize drought resistant landscapes on community owned facilities.
		  • Encourage citizens to take water-saving measures.
		• Increase Capability:
		  • Public education on drought resistance.
		  • Identify alternative water supplies for time of drought. Mutual aid agreements with alternative suppliers.
		  • Develop a drought contingency plan.
		  • Develop criteria-"triggers" for drought related actions.
		  • Improve accuracy of water supply forecasts.
		  • Provide incentives to influence active water conservation techniques such as water user rate reductions.

DROUGHT		
Personal Scale	**Corporate Scale**	**Government Scale**
• Practice active water conservation techniques. • Seek ways to operate wells in such a way to enhance their functional longevity and supply capability.		• Consider providing incentives to property owners that utilize drought resistant landscapes in the design of their homes. • Use of water buffalo tankers. • Promote well usage techniques that strive to enhance functional longevity and supply capability of private water supply wells. • Develop an ordinance to restrict the use of public water resources for non-essential usage, such as landscaping, washing cars, filling swimming pools, etc.

EARTHQUAKE		
Personal Scale	**Corporate Scale**	**Government Scale**

• Manipulate the Hazard:
  • None
• Reduce exposure to the hazard:
  • Locate outside of hazard area (off soft soils).
• Reduce vulnerability to the hazard:
  • Retrofit structure (anchor house structure to foundation).
  • Secure household items that can cause injury or damage such as water heaters, bookcases, and other appliances.
  • Build to higher design standards.
• Increase Capability:
  • Practice "drop, cover and hold"
  • Develop household mitigation plan, such as creating a retrofit savings account, communication capability with outside, 72 hr. self-sufficiency during an event.
  • Increase capability by having cash reserves for reconstruction.
  • Become informed on the hazard and risk reduction alternatives available.
  • Develop a post-disaster action plan for your household.
	• Manipulate the Hazard:
	  • None
	• Reduce exposure to the hazard:
	  • Locate/relocate mission critical functions outside hazard area where possible.
	• Reduce vulnerability to the hazard:
	  • Build redundancy for critical functions/facilities.
	  • Retrofit critical buildings/areas housing mission critical functions.
	• Increase Capability:
	  • Adopt higher standard for new construction -- Consider "performance-based design' when building new structures.
	  • Increase capability by having cash reserves for reconstruction.
	  • Inform your employees on the possible impacts of earthquake and how to deal with them at your work facility.
	  • Develop a Continuity of Operations Plan (COOP).
		• Manipulate the Hazard:
		  • None
		• Reduce exposure to the hazard:
		  • Locate critical facilities or functions outside of hazard area where possible.
		• Reduce vulnerability to the hazard:
		  • Harden infrastructure.
		  • Provide redundancy for critical functions.
		  • Adopt higher regulatory standards for structures.
		  • Conduct "rapid screening" programs for critical facilities to identify facilities that may be particularly prone to EQ damage, then develop investigation/action plans to address such structures.
		• Increase Capability:
		  • Provide better hazard maps.
		  • Provide technical information and guidance.
		  • Enact tools to help manage development in hazard areas: tax incentives, information.
		  • Include retrofitting/replacement of critical system elements in CIP.
		  • Develop strategy to take advantage of post disaster opportunities.
		  • Warehouse critical infrastructure components such as pipe, power line, and road repair material.
		  • Develop and adopt a Continuity of Operations / Continuity of Government Plan (COOP/COG).
		  • Initiate triggers guiding improvements such as: (< 50% substantial damage/improvements).
		  • Further enhance seismic risk assessment to target high hazard buildings for mitigation opportunities.

EARTHQUAKE		
Personal Scale	Corporate Scale	Government Scale
		• Develop a post disaster action plan that includes a grant funding and debris removal components. • Utilize warning systems. • Educate builders and developers on seismic construction standards.

Extreme Temperature		
Personal Scale	**Corporate Scale**	**Government Scale**

• Manipulate the Hazard:
  • Increase tree plantings
  • Installation of green roofs to provide shade and remove heat
  • Use cool roofing products that reflect sunlight and heat away from a building
• Reduce exposure to the hazard:
  • None
• Reduce vulnerability to the hazard:
  • Retrofit pipes including locating water pipes on the inside of building insulation or keeping them out of vulnerable spaces to extreme cold
• Increase Capability:
  • None
	• Manipulate the Hazard:
	  • Increase tree plantings
	  • Installation of green roofs to provide shade and remove heat
	  • Use cool roofing products that reflect sunlight and heat away from a building
	• Reduce exposure to the hazard:
	  • None
	• Reduce vulnerability to the hazard:
	  • Retrofit pipes including locating water pipes on the inside of building insulation or keeping them out of vulnerable spaces to extreme cold
	• Increase Capability:
	  • Set rules restricting outdoor work during extreme temperature events
		• Manipulate the Hazard:
		  • Increase tree plantings
		  • Encourage the installation of green roofs to provide shade and remove heat
		  • Encourage the use of cool roofing products that reflect sunlight and heat away from a building
		• Reduce exposure to the hazard:
		  • None
		• Reduce vulnerability to the hazard:
		  • Require minimum temperatures in housing/landlord codes
		• Increase Capability:
		  • Educate citizens regarding the dangers of extreme heat and cold and the steps they can take to protect themselves when extreme temperatures occur
		  • Establish warming and cooling centers
		  • Establish extreme temperature planning in emergency operation plans
		  • Create a database to track those individuals at high risk of death such as the elderly, homeless, etc.

FLOOD		
Personal Scale	**Corporate Scale**	**Government Scale**

• Manipulate the Hazard:
  • Clear stormwater drains and culverts.
• Reduce exposure to the hazard:
  • Locate or re-locate outside of hazard area.
  • Institute low impact development techniques on property.
• Reduce vulnerability to the hazard:
  • Retrofit existing structures and utilities above Base Flood Elevation (BFE).
  • Floodproof existing structures (wet- or dry floodproofing).
  • Store hazardous materials above BFE or outside of floodprone areas.
• Increase Capability:
  • Develop household mitigation plan, such as retrofit savings, communication capability with outside, 72-hr. self-sufficiency during and after an event.
  • Buy flood insurance.
	• Manipulate the Hazard:
	  • Clear stormwater drains and culverts.
	• Reduce exposure to the hazard:
	  • Locate business critical facilities or functions outside hazard area.
	  • Institute low impact development techniques on property.
	• Reduce vulnerability to the hazard:
	  • Build redundancy for critical functions/ retrofit critical buildings.
	  • Provide flood-proofing measures when new critical infrastructure must be located in floodplains.
	  • Harden structures and infrastructure (wet and dry-floodproofing).
	  • Store hazardous materials above BFE or outside of floodprone areas.
	• Increase Capability:
	  • Increase capability by having cash reserves for reconstruction.
	  • Develop and adopt a Continuity of Operations Plan (COOP).
	  • Solicit 'cost-sharing" through partnerships with private sector stakeholders on projects with multiple benefits.
	  • Dam owner/operators should continue to be aware of and understand dam inspection and reporting requirements.
	  • Ensure that all dam EAP's are kept in compliance with State Regulations.
		• Manipulate the Hazard:
		  • Clear stormwater drains and culverts
		  • Dredging, levee construction, providing retention areas.
		  • Structural flood control: levee's, dams, channelization, revetments.
		  • Construct regional stormwater control facilities.
		  • Lead and develop a county-wide stream clearing strategy including the development of thresholds for response/action.
		• Reduce exposure to the hazard:
		  • Locate/re-locate critical facilities outside of hazard area.
		  • Acquire or relocate identified repetitive loss properties.
		  • Promote open space uses in identified high hazard areas via techniques such as: PUD's, easements, setbacks, greenways, sensitive area tracks.
		  • Adopt land development criteria such as PUD's, Density transfers, clustering.
		  • Institute low impact development techniques on property.
		  • Acquire vacant land or promote open space uses in developing watersheds to control increases in runoff.
		  • Pass an ordinance to incorporate additional zoning classifications into flood zones within each municipality.
		  • Increase floodplain standards within municipal ordinances and include provisions for enforcing best practice standards.
		  • Consider increasing minimum freeboard beyond state requirements.

FLOOD		
Personal Scale	Corporate Scale	Government Scale

		• Continue development application reviews by County Planning Board to reduce risky development practices.
		• Reduce vulnerability to the hazard:
		  • Harden structures and infrastructure (wet and dry-floodproofing).
		  • Provide redundancy for critical functions and infrastructure.
		  • Adopt appropriate regulatory standards such as cumulative substantial improvement/damage, freeboard, lower substantial damage threshold, compensatory storage.
		  • Stormwater management regulations and master planning.
		  • Adopt "no-adverse impact" floodplain management policies that strive to not increase the flood risk on down-stream communities.
		  • Participate in the Community Rating System (CRS).
		  • Implement as-built regulatory requirements.
		  • Implement site review ordinances/requirements.
		  • Establish stream maintenance programs with stakeholders (e.g. Soil and Water Conservation District) - support county leads of such efforts.
		  • Incorporate retrofitting/replacement of critical facilities and infrastructure in Capital Improvement Plans (CIPs).
		  • Promote the use of vegetation/plants as green erosion control measures to reduce localized flooding.
		  • Work with environmental groups to address removal of debris, log jams, etc. in flood vulnerable stream sections.
		• Increase Capability:

FLOOD		
Personal Scale	Corporate Scale	Government Scale
		• Produce better hazard maps, and improve access to flood hazard mapping • Capture/survey "high-water" marks during flood events. • Provide technical information and guidance on appropriate mitigation options available to businesses and homeowners. • Enact tools to help manage development in hazard areas (stronger controls, tax incentives, information). • Establish an additional layer of zoning within flood hazard areas. • Develop strategy to take advantage of post disaster opportunities. • Improve compliance with and enforcement of the NFIP. • Develop mitigation partnerships with regional stakeholders. • Join Community Rating System (CRS) program, or improve level of participation in CRS. • Develop and implement a public information strategy for flood hazard awareness, flood insurance (NFIP) and mitigation. • Maintain existing data as well as gather new data needed to define risks and vulnerability. • Create a building and elevation inventory of structures in the floodplain • Identify flood prone areas that may be in need of new flood studies. • Establish a program to identify and educate owners of flood-prone properties of potential mitigation options (e.g. elevations, relocations). • Charge a hazard mitigation fee on all new permits to create a hazard mitigation

FLOOD		
Personal Scale	Corporate Scale	Government Scale
		funding source for initiatives or grant cost share requirements. • Integrate floodplain management policies into other planning mechanisms within the planning area. • Establish a Stormwater Utility to deal with urban drainage/flooding issues. • Establish incentives to promote flood hazard mitigation of private property (e.g. permit fee waivers). • Adopt ordinances/standards for cumulative damages and/or improvements. • Upgrade NFIP Floodplain ordinance, as well as other ordinances to current or above current state and federal standards. • Develop and adopt a COOP. • Join "Storm Ready" Program. • Participate in county and regional training programs. • Provide additional training/certification to NFIP floodplain administrators and code officials. • Implement annual training to account for turnover of municipal officials. • Maintain and enhance flood forecasting ability, including the establishment and maintenance of critical stream gages. • Explore grant funding opportunities and potential partnerships to help maintain existing gages and install additional gages to improve forecasting and flood warning ability. • Promote awareness and participation in alert systems. • Support and participate in regional flood management efforts.

FLOOD		
Personal Scale	Corporate Scale	Government Scale
		• Support and implement hazard disclosure for the sale/re-sale of property in identified risk zones. • Provide continued and enhanced training for emergency responders. • Establish a revolving "bank" or budget line item to fund grant application support. • Continue to review updated Flood Insurance Rate Maps to ensure accuracy as well as maintaining lines of communication with homeowners to make them aware of potential changes related to their property status. • Provide trainings for FPA's on the NFIP/Floodplain Best Practices and also pursue CFM accreditation for municipal FPA's. • Build and maintain relationships to develop regional watershed/floodplain mitigation solutions. • Pursue grant funding opportunities to fund repairs of catchments and infrastructure on a proactive basis. • Explore grant funding opportunities related to climate change to fund mitigation projects.

LANDSLIDE		
Personal Scale	**Corporate Scale**	**Government Scale**

• Manipulate the Hazard:
  • Apply soil stabilization measures, such as planting soil stabilizing vegetation on steep slopes.
• Reduce exposure to the hazard:
  • None
• Reduce vulnerability to the hazard:
  • None
• Increase Capability:
  • None
	• Manipulate the Hazard:
	  • None
	• Reduce exposure to the hazard:
	  • None
	• Reduce vulnerability to the hazard:
	  • None
	• Increase Capability:
	  • None
		• Manipulate the Hazard:
		  • Implement reinforcement measures in high-risk areas.
		  • Use debris flow measures that may reduce damage in sloping areas, such as stabilization, emergency dissipation, and flow control measures.
		  • Apply soil stabilization measures, such as planting soil stabilizing vegetation on steep, publicly owned slopes.
		• Reduce exposure to the hazard:
		  • Consider hazard areas in land-use
		  • planning, zoning, and development siting.
		  • Acquire structures in highest hazard areas (demolish and convert to restricted open space).
		  • Relocation of Structures.
		  • Open Space Preservation.
		  • Create or increase setback limits on parcels near high-risk parcels.
		• Reduce vulnerability to the hazard:
		  • Consider hazard areas in land-use
		  • planning and development siting.
		  • Stabilize vulnerable slopes near
		  • structures and infrastructure.
		  • Work with stakeholders such as USGS to develop appropriate risk reduction strategies.
		  • Install catch-fall nets for rocks at steep slopes near roadways.
		• Increase Capability:
		  • Increase understanding of hazard
		  • areas (e.g. Landslide Susceptibility Maps) - geotechnical surveys, LIDAR and mapping.
		  • Assessing vegetation in wildfire-prone areas to prevent landslides after fires (e.g. encourage plants with strong root systems).

LANDSLIDE		
Personal Scale	Corporate Scale	Government Scale
		• Work with stakeholders such as USGS to develop appropriate risk reduction strategies. • Support and implement hazard • disclosure for the sale/re-sale of • property in identified risk zones. • Develop county-level programs to document slide events (landslide inventory), and maintain its currency.

SEVERE WEATHER		
Personal Scale	**Corporate Scale**	**Government Scale**

• Manipulate the Hazard:
  • Increase tree plantings.
  • Installation of green roofs to provide shade and remove heat.
  • Use cool roofing products that reflect sunlight and heat away from a building.
• Reduce exposure to the hazard:
  • None
• Reduce vulnerability to the hazard:
  • Retrofit structures (improved roofing, glazing, insulation, etc.).
  • Provide for redundant heat and power.
  • Contact municipality or utilities to trim or remove trees that could affect power lines.
  • Plant appropriate trees near home and power lines ("Right tree, right place" National Arbor Day Foundation Program.
  • Retrofit pipes including locating water pipes on the inside of building insulation or keeping them out of vulnerable spaces to extreme cold.
• Increase Capability:
  • Improve awareness of impending severe weather (e.g. obtain a NOAA weather radio).
  • Promote 72-hour self-sufficiency.
  • Provide for redundant heat and power.
	• Manipulate the Hazard:
	  • Increase tree plantings.
	  • Installation of green roofs to provide shade and remove heat.
	  • Use cool roofing products that reflect sunlight and heat away from a building.
	• Reduce exposure to the hazard:
	  • None
	• Reduce vulnerability to the hazard:
	  • Relocate critical infrastructure, such as power lines, underground.
	  • Reinforce or relocate critical infrastructure such as powerlines so that it meets performance expectations.
	  • Retrofit pipes including locating water pipes on the inside of building insulation or keeping them out of vulnerable spaces to extreme cold.
	• Increase Capability:
	  • Contact municipality or utilities to trim or remove trees that could affect power lines.
	  • Create redundancy (e.g. backup generators).
	  • Improve awareness of impending severe weather (e.g. obtain a NOAA weather radio).
	  • Develop a Continuity of Operations Plan (COOP).
	  • Monitor impending storm events so that you can release employees in such a manner as to not negatively impact emergency response personnel/services.
	  • Set rules restricting outdoor work during extreme temperature events.
		• Manipulate the Hazard:
		  • Increase tree plantings.
		  • Encourage installation of green roofs to provide shade and remove heat.
		  • Encourage the use of cool roofing products that reflect sunlight and heat away from a building.
		• Reduce exposure to the hazard:
		  • None
		• Reduce vulnerability to the hazard:
		  • Harden infrastructure such as locating utilities underground.
		  • Trimming trees back from power lines.
		  • Designate and strengthen critical road sections and bridges.
		  • Adopt ordinances that regulate the type and quantity of trees planted near utility lines.
		  • Relocate critical infrastructure, such as power lines, underground.
		  • Require minimum temperatures in housing/landlord codes.
		• Increase Capability:
		  • Support programs such as "Tree Watch" that proactively manage problem areas by use of selective removal of hazardous trees, tree replacement, etc.
		  • Enforce building codes.
		  • Increase communication alternatives.
		  • Modify land use and environmental regulations to support vegetation management activities that improve reliability in utility corridors.
		  • Modify landscape and other ordinances to encourage appropriate planting near overhead power, cable, and phone lines.
		  • Promote awareness and participation in alert systems.
		  • Provide NOAA weather radios to the public.

SEVERE WEATHER		
Personal Scale	**Corporate Scale**	**Government Scale**
		• Create/Enhance "mutual aid" agreements for response to all emergencies. • Create/identify evacuation routes to be utilized during severe storm events. • Develop debris management plans. • Join "Storm-Ready" program. • Provide early warning of impending severe storm events to identified critical or essential facilities. This would include facilities such as large employments centers, schools, hospitals. • Promote emergency power supplies to private property. • Improve, expand, or harden communications facilities and services. • Recruit additional emergency personnel or use mutual aid agreements. • Increase sheltering capabilities. • Increase capability to respond to power outages and downed power lines. Establish partnerships with utility providers through pro-active planning. • Educate citizens regarding the dangers of extreme heat and cold and the steps they can take to protect themselves when extreme temperatures occur. • Establish warming and cooling centers. • Establish extreme temperature planning in emergency operation plans. • Create a database to track those individuals at high risk of death such as the elderly, homeless, etc.

SEVERE WINTER WEATHER		
Personal Scale	**Corporate Scale**	**Government Scale**

• Manipulate the Hazard:
  • None
• Reduce exposure to the hazard:
  • Plant appropriate trees near home and power lines (“Right tree, right place” National Arbor Day Foundation).
• Reduce vulnerability to the hazard:
  • Insulate House to provide greater thermal efficiency and reduce heat loss.
  • Provide redundant heat and power.
  • Insulate Structure.
  • Ensure natural gas input/release valves do not get covered in snow.
• Increase Capability:
  • Trim or remove trees that could affect power lines.
  • Prepare emergency food and supplies to be self-sufficient for at least 72 hours in the event of a severe winter storm.
  • Be aware of inclement weather conditions and move your vehicles off the street as severe weather systems approach.
  • Retrofit structures.
	• Manipulate the Hazard:
	  • None
	• Reduce exposure to the hazard:
	  • None
	• Reduce vulnerability to the hazard:
	  • Relocate critical infrastructure, such as power lines, underground.
	  • Reinforce or relocate critical infrastructure such as powerlines so that it meets performance expectations.
	  • Install tree wire.
	• Increase Capability:
	  • Trim or remove trees that could affect power lines.
	  • Create redundancy in utilities and communications.
	  • Develop a Continuity of Operations Plan (COOP) to address operations before, during and after coastal storm events.
	  • Utilize weather radios at the work place to keep your employees aware of severe weather conditions.
		• Manipulate the Hazard:
		  • None
		• Reduce exposure to the hazard:
		  • None
		• Reduce vulnerability to the hazard:
		  • Harden infrastructure such as locating utilities underground where appropriate.
		  • Trimming trees back from power lines.
		  • Designate snow routes and strengthen critical road sections and bridges.
		  • Adopt codes and regulations that address the issues of parking of vehicles along roadways during severe weather events.
		  • Develop or enhance the capacity/capability of stormwater conveyance systems.
		  • Provide backup power sources at vital critical facilities.
		• Increase Capability:
		  • Support programs that proactively manage problem areas by use of selective removal of hazardous trees, tree replacement, etc.
		  • Establish and enforce building codes that require all roofs to withstand snow loads--Develop/Improve/Enforce building Codes in Hazard Areas.
		  • Increase communication alternatives.
		  • Modify land use and environmental regulations to support vegetation management activities that improve reliability in utility corridors.
		  • Modify landscape and other ordinances to encourage appropriate planting near overhead power, cable, and phone lines.
		  • Provide weather radios to vulnerable populations.
		  • Enhance public awareness campaigns to address those issues of alert and warning

SEVERE WINTER WEATHER		
Personal Scale	**Corporate Scale**	**Government Scale**
		and actions to take during severe weather events. • Utilize the best available technology to enhance the warning systems for all severe weather events (i.e.: tornado warning systems). • Coordinate severe weather warning capabilities and the dissemination of warning amongst those agencies within the planning are with the highest degree of capability. • Encourage local ordinances for planting tree near lines and join Tree City USA. • Increase tree management programs. • Join the Community Rating System. • Join "Storm-Ready". • Retrofit critical structures and promote hazard resistant construction. • Keep open communications and education of hazards for mobile home communities. • Retrofit above-ground utilities to underground facilities if appropriate. • Create a salt reserve or research alternates to stretch salt reserve. • Ensure accessibility to hospitals. • Provide better debris logistics and removal. • Provide better communication systems and back-up communication systems to inform public of hazards and to communicate during the hazard event.

APPENDIX J: NYS DHSES PLANNING STANDARDS

This appendix includes the 2022 NYS DHSES planning standards and guidelines for hazard mitigation planning.

2022 New York State Hazard Mitigation Planning Standards

(Supersedes the 2017 NYS Hazard Mitigation Planning Standards)

Congratulations on taking the first steps to update a multi-hazard mitigation plan for your community!

The goal of both the New York State Division of Homeland Security and Emergency Services (NYS DHSES) and FEMA is that all jurisdictions develop robust mitigation plans and tangible mitigation actions that will contribute to long-term risk reduction.

The 2022 NYS Hazard Mitigation Planning Standards reduce the 2017 Hazard Mitigation Planning Standards. Any plan currently in development, regardless of date funded, will be held *only* to these reduced standards.

PLEASE NOTE:

On April 19, 2023, FEMA's new Local Mitigation Planning Policy will take effect. Plans approved on or after this date **must meet requirements** as outlined in the linked Policy Guide.

https://www.fema.gov/sites/default/files/documents/fema_local-mitigation-planning-policy-guide_042022.pdf

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The additional state requirements detailed below are intended to improve the quality of hazard mitigation plans and encourage the development of the most appropriate and effective mitigation projects for your community. It is recognized that many jurisdictions have inherent constraints and certain information may be difficult to provide. NYS DHSES and FEMA will work with you throughout the entire planning process to ensure the successful development of your community's hazard mitigation plan.

There are a multitude of resources that exist to provide guidance and support throughout the planning process, developed by Federal and State agencies, as well as private and research-based groups. We urge you to contact us so that we may direct you to additional resources and provide you with the most comprehensive technical assistance possible.

For questions and comments, please call our offices at 518-292-2304.

Additional contact information will be provided to sub-recipients for more direct assistance.

Please note:

Jurisdiction is used to describe all government entities within the boundaries set forth in the Multi-Jurisdictional Plan (typically County-wide), including the County itself, as well as cities, towns, villages and potentially tribes that choose to join a multi-jurisdictional plan.

Special Flood Hazard Area (SFHA) is defined as the area that will be inundated by the flood event having a 1-percent change of being equaled or exceeded in a given year (previously known as the 100-year flood event).

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1. Assess Critical Facilities

Critical facilities must remain accessible and functional before, during and after disasters to meet the jurisdictions Continuity of Government (COG) and Continuity of Operations (COOP) standards, and to support important emergency, government and sheltering functions.

Jurisdictions must identify all critical facilities, assess their vulnerabilities, and evaluate and ensure they are protected to a 0.02% chance (500-year) flood event. Critical facilities that are located in an SFHA and/or have been previously flooded, must be protected against a repeat of that flood or to the 0.02% chance flood event, which ever provides the greater protection.

- The plan must document the name of facility, type of facility, jurisdictional location, and exposure to a 1% (100-year) and 0.02% chance event.
- The plan must document those critical facilities are protected to a 0.02% flood event, or previous worst case flood event. For those that do not meet this level of protection, the plan must include an action to meet or go beyond this criterion or explain why it is not feasible to do so. Going beyond this criterion is optional but may be wise to protect against a future worst case due to climate change.

2. Include Jurisdictional Annexes

Jurisdictional annexes provide a unique, stand-alone guide to mitigation planning for each jurisdiction.

The plan must be organized so that there is an annex for every jurisdiction within the county's borders, including the County.

- The plan must include a table in the Introduction section clearly identifying all jurisdictions and which are seeking FEMA approval.
- The annex for each jurisdiction seeking FEMA approval must include the following:
  - Contact Information;
  - Jurisdiction Profile;
  - Hazard Identification (specific to the jurisdiction);
  - Hazard Event History;
  - National Flood Insurance Program (NFIP) Summary (to meet Federal Standards);
  - Critical Facilities Information (to meet F1);
  - Jurisdiction/public identified vulnerabilities;
  - Additional public involvement;
  - Capabilities Assessment;
  - Mitigation Strategy:
    - All identified previous mitigation activities with current status;
    - All proposed mitigation activities (both new and carried forward, to meet F3)
  - The annex for each non-participating jurisdiction (those not seeking FEMA approval at this time), must include a cover sheet and should include as much information as is available.

3. Develop Mitigation Actions

Projects that are well developed and documented in one place are more quickly identifiable for selection when grants become available, making implementation that much more likely.

Within each jurisdictional annex, jurisdictions must develop a minimum of two (2) new or carryover (not started) proposed mitigation actions that include all information requested in the NYS DHSES LHMP Proposed Action spreadsheet. For jurisdictions containing an SFHA, one (1) of these actions must be for a project that addresses flooding.

4. Post Draft Plan Online

Allowing the public to comment on the draft plan increases awareness about how mitigation saves lives and reduces risk and allows a final opportunity for public input.

The public must have an opportunity to view and comment on the draft plan prior to submittal.

- The draft plan must be posted in full (except for discretionary sensitive information) on an existing county/jurisdiction website, or one created for the purpose of soliciting comments, for 30 days or the time prescribed by local law, whichever is greater, and the plan must describe efforts made to solicit public comments from potentially underserved areas where residents may not have access to a computer to view the website. The website must clearly identify how the public can comment on the plan, to include either specific contact information to send comments or a user-friendly form or survey.

After NYS DHSES and FEMA Approval

- Once designated Approvable Pending Adoption (APA) or Approved by FEMA, the final plan must be placed on the same website (cited above) in its entirety (except for discretionary sensitive information).
- Final payment will occur only after 50% of the participating jurisdictions have adopted the plan and provided adoption resolutions to NYS DHSES. For county-led hazard mitigation planning efforts, the county must be one of the adopting jurisdictions.

The chart below shows the requirements as they appear on the plan review tool used by NYS DHSES and FEMA Region II to determine whether a submitted plan meets federal and state requirements.

1. REGULATION CHECKLIST **Regulation** (44 CFR 201.6 Local Mitigation Plans)	**Location in Plan** (section and/or page number)	**Met**	**Not Met**
ELEMENT F. ADDITIONAL STATE REQUIREMENTS – NYS HAZARD MITIGATION PLANNING STANDARDS **These are required actions for plans developed with NYS DHSES-administered funds.**			
H1. Do jurisdictions identify critical facilities, assess vulnerabilities, and ensure protection to a 0.02% flood event or worst-case scenario?			
H2. Does the plan include an annex for every jurisdiction within the County's boundaries?			
H3. Within each jurisdictional annex, are projects developed in accordance with the NYS DHSES Proposed Projects Table?			
H4. Was the draft plan posted for public comment?			
Note: The applicant is required to address the 2022 NYS Hazard Mitigation Planning Standards as required actions for a hazard mitigation plan developed with funds administered by NYS DHSES. **ELEMENT H: REQUIRED REVISIONS** ***Please see opportunities for improvement***			

APPENDIX K: LINKAGE PROCEDURES

This Appendix contains the linkage procedures for the Seneca County Hazard Mitigation Plan.

ADMINISTRATIVE PROCESS FOR "LINKAGE" TO THE SENECA COUNTY HAZARD MITIGATION PLAN

The development of the Seneca County Hazard Mitigation Plan 2025 Update (the Plan) included the County and all eligible local governments within the defined planning area are included in this plan. Completed jurisdictional annexes are presented in Volume II. Any non-participating local jurisdictions such as Fire Districts, Utility Districts, School Districts, and any other eligible local government as defined in 44 CFR 201.2 within the Seneca County planning area can join this plan as a participating jurisdiction and to ultimately achieve approved status by following the linkage procedures defined in this appendix.

It is assumed that some or all these local jurisdictions may choose to "link" to the Plan at some point in time to gain eligibility for programs under the DMA. In addition, some of the current partnership may not continue to meet eligibility requirements due to the lack of active participation as prescribed by the plan. These "linkage" procedures will define the requirements established by the Seneca County HMP Steering Committee and all planning partners for dealing with the increase or decrease in planning partners linked to this plan. It should be noted that currently non-participating jurisdictions within the defined planning area are not obligated to link to this plan. These jurisdictions can choose to do their own "complete" plan that addresses all required elements of section 201.6 of 44CFR.

INCREASING THE PARTNERSHIP THROUGH LINKAGE

Eligibility

Eligible jurisdictions located in the planning area may link to this plan at any point during the plan's performance period. Eligible jurisdictions located in the planning area may link to this plan at any point during the plan's performance period (5 years after final approval). Eligibility will be determined by the following factors:

- The linking jurisdiction is a local government as defined by the Disaster Mitigation Act.
- The boundaries or service area of the linking jurisdiction is completely contained within the boundaries of the planning area established during the 2025 hazard mitigation plan development process.
- The linking jurisdiction's critical facilities were included in the critical facility and infrastructure risk assessment completed during the 2025 plan development process.

Requirements

It is expected that linking jurisdictions will complete the requirements outlined below and submit their completed template to the lead agency Seneca County Department of Public Safety – Emergency Management Office for review within six months of beginning the linkage process:

1. The Seneca County Hazard HMP Steering Committee has established an annual window for which linkage to the plan can occur. Linking jurisdictions are instructed to complete the following procedures during this time frame.
2. The current non-participating jurisdiction contacts the Seneca County HMP Coordinator for the Plan and requests a "Linkage Package". The Seneca County HMP Coordinator is:

Melissa Taylor, Director

Emergency Management Office

Seneca County Public Safety Department

1 DiPronio Drive

Waterloo, New York 13165

(315) 539-1756

mtaylor@co.seneca.ny.us

3. The Seneca County HMP Coordinator will provide a linkage package that includes:

   - Copy of Volume I and II of the Plan (CDROM).
   - Planning Partner's Expectations Sheet.
   - A Sample "Letter of Intent" to Link to the Plan.
   - A Jurisdictional Template and Instructions.
   - Catalog of Hazard Mitigation Alternatives or the Mitigation Catalog.
   - A copy of Section 201.6 of Chapter 44, the Code of Federal Regulations (44CFR), which defines the federal requirements for a local hazard mitigation plan.

4. The new jurisdiction will be required to review both volumes of the Plan which includes the following key components for the planning area:

   - The Seneca County risk assessment;
   - The plan's goals and objectives;
   - Plan implementation and maintenance procedures;
   - Catalog of potential mitigation actions; and
   - County-wide initiatives.

Once this review is complete, the jurisdiction will complete its specific jurisdictional annex by following the template and its instructions for completion provided by the Seneca County HMP Coordinator. Technical assistance can be provided upon request by completing the request for technical assistance (TA) form provided in the linkage package. This TA may be provided by the Seneca County HMP Coordinator or any other resource within the Planning Partnership such as a member of the HMP Steering Committee or a currently participating jurisdiction. The Seneca County HMP Coordinator will determine who will provide the TA and the possible level of TA based on resources available at the time of the request.

5. The new jurisdiction will also be required to develop a public involvement strategy that ensures their public's ability to participate in the plan development process. At a minimum, the new jurisdiction must make an attempt to solicit public opinion on hazard mitigation at the onset of this linkage process and a minimum of one public meeting to present their draft jurisdiction specific annex for comment, prior to adoption by the governing body. The Planning Partnership will have available resources to aid in the public involvement strategy such as the Plan website. However, it will be the new jurisdiction's responsibility to implement and document this strategy for incorporation into their annex.

   It should be noted that the Jurisdictional Annex templates do not include a section for the description of the public process. This is because the original partnership was covered under a uniform public involvement strategy that covered the operational area that is described in Volume I of the plan. Since the new partner was not addressed by that strategy, they will have to initiate a new strategy, and add a description of that strategy

to their annex. For consistency, new partners are encouraged to follow the public involvement format utilized by the initial planning effort as described in Volume I of the Plan.

6. Once their public involvement strategy is completed and they have completed their template, the new jurisdiction will submit the completed package to the Seneca County HMP Coordinator for a pre-adoption review to ensure conformance with the regional plan format.

7. The Seneca County HMP Coordinator will review for the following:

   - Documentation of public involvement and mitigation action development strategies;
   - Conformance of template entries with guidelines outlined in instructions;
   - Chosen actions are consistent with goals, objectives, and mitigation catalog of Seneca County Hazard Mitigation Plan; and
   - Designated point of contact.

   The Seneca County HMP Coordinator may utilize members of the HMP Steering Committee or other resources to complete this review. All proposed linked annexes will be submitted to the HMP Planning Committee for their review and comment prior to submittal to the New York State Division of Homeland Security and Emergency Services (NYS DHSES).

8. Plans approved and accepted by the HMP Steering Committee will then be forwarded to NYS DHSES for review with cover letter stating the forwarded plan meets local approved plan standards and whether the plan is submitted with local adoption or for criteria met/plan not adopted review.

9. NYS DHSES will review plans for state and federal compliance. Non-compliant plans are returned to the jurisdiction for correction. Compliant plans are forwarded to FEMA Region II office for review with annotation as to the adoption status.

10. FEMA Region II reviews the new jurisdiction's plan in association with the approved plan to ensure DMA compliance. Region II notifies new jurisdiction of results of review with copies to NYS DHSES and approved planning authority.

11. New jurisdiction corrects plan’s shortfalls (if necessary) and resubmits to NYS DHSES through the approved plan lead agency.

12. For plans with no shortfalls that have not been adopted from the Region II review or outstanding corrected shortfalls, the new jurisdiction governing authority adopts the plan (if not already accomplished) and forwards adoption resolution to Region II with copies to lead agency and NYS DHSES.

13. Region II Director notifies new jurisdiction governing authority of plan approval.

14. The new jurisdiction plan is then included with the Seneca County HMP and the linking jurisdiction is committed to participate in the ongoing plan implementation and maintenance identified in Volume I of the HMP.