



## 16. VILLAGE OF WATERLOO

This jurisdictional annex to the Seneca County Hazard Mitigation Plan (HMP) provides information to assist public and private sectors in the Village of Waterloo with reducing losses from future hazard events. This annex is not guidance of what to do when a disaster occurs; its focus is on actions that can be implemented prior to a disaster to reduce or eliminate damage to property and people. The annex presents a general overview of the Village of Waterloo, describes who participated in the planning process, assesses the Village of Waterloo’s risk, vulnerability, and capabilities, and outlines a strategy for achieving a more resilient community.

### 16.1 HAZARD MITIGATION PLANNING TEAM

The Village of Waterloo identified the hazard mitigation plan (HMP) primary and alternate points of contact and developed this plan over the course of several months with input from many Village departments. The Town Administrator represented the community on the Seneca County Hazard Mitigation Plan Planning Partnership and supported the local planning process requirements by securing input from persons with specific knowledge to enhance the plan. All departments were asked to contribute to the annex development through reviewing and contributing to the capability assessment, reporting on the status of previously identified actions, and participating in action identification and prioritization.

Table 16-1 summarizes Village officials who participated in the development of the annex and in what capacity. Additional documentation of the Village’s planning activities through Planning Partnership meetings is included in Volume I.

Table 16-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Don Northrup, Town Administrator Address: 41 W. Main Street, Waterloo, NY 13165 Phone Number: (315) 539-9131 Email: dnorthrup@waterloony.com	Name/Title: Walter Bennett, Mayor Address: 41 W. Main Street, Waterloo, NY 13165 Phone Number: (315) 539-9131 Email: waterloo.ny.mayor@proton.me
<b>National Flood Insurance Program Floodplain Administrator</b>	
Name/Title: Lee Marquart, Code Enforcement Officer Address: 41 W. main Street, Waterloo, NY 13165 Phone Number: (315) 651-9017 Email: waterloocodes@waterloopd.org	

### 16.2 COMMUNITY PROFILE

The Village of Waterloo is mostly in the Town of Waterloo, but the part south of the Village is in the Town of Fayette and a small area in the southeast of the Village is in Town of Seneca Falls. Waterloo is east of Geneva and is located in between the two main Finger Lakes, Seneca Lake, and Cayuga Lake. The Seneca River/Cayuga-Seneca Canal passes through the Village, linking the area to the Erie Canal system. US Route 20, conjoined with New York State Route 5, intersects New York State Route 96 in the Village.

According to the U.S. Census, the 2020 population for the Village of Waterloo was 4,810. Data from the 2020 U.S. Census indicate that 4.9 percent of the population is 5 years of age or younger, 22.6 percent is 65 years of age or older, 0.4 percent is non-English speaking, 10.4 percent is below the poverty threshold, and 20.3 percent is



considered disabled. Communities must deploy a support system that enables all populations to safely reach shelters or to quickly evacuate a hazard area.

## 16.3 JURISDICTIONAL CAPABILITY ASSESSMENT AND INTEGRATION

The Village of Waterloo performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Volume I describes the components included in the capability assessment and their significance for hazard mitigation planning. The jurisdictional assessment for this annex includes analyses of the following:

- Planning and regulatory capabilities
- Development and permitting capabilities
- Administrative and technical capabilities
- Fiscal capabilities
- Education and outreach capabilities
- Classification under various community mitigation programs
- Adaptive capacity to withstand hazard events

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into day-to-day local government operations. As part of the hazard mitigation analysis, planning and /policy documents were reviewed and each jurisdiction was surveyed to obtain a better understanding of their progress toward plan integration. Development of an updated mitigation strategy provided an opportunity for the Village of Waterloo to identify opportunities for integrating mitigation concepts into ongoing Village procedures.

### 16.3.1 Planning and Regulatory Capability and Integration

Table 16-2 summarizes the planning and regulatory tools that are available to the Village of Waterloo.

Table 16-2. Planning and Regulatory Capability and Integration

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Individual / Department / Agency Responsible
<b>Codes, Ordinances, &amp; Regulations</b>				
<b>Building Code</b>	Yes	Uniform Fire Prevention and Building Code, 2021	State and County	NYS Division of Building Standards and Codes, Seneca County Building Codes Enforcement
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The Village of Waterloo does not enforce the NYS Uniform Fire Prevention and Building Code, Seneca County is the enforcing jurisdiction of state building codes.				
<b>Zoning/Land Use Code</b>	Yes	Chapter 245, Zoning	Local	Zoning Officer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
Promote and protect the established character of the Village neighborhoods, to allow for coherent and orderly growth and to continue to allow for the comfort, convenience and prosperity of community residents and landowners.				



	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Individual / Department / Agency Responsible
<b>Subdivision Code</b>	Yes	Chapter 245 Article 6, Site Plan Review	Local	Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The Planning Board is authorized and directed to review and approve preliminary and final plats of subdivisions showing lots, blocks or sites, with or without streets or highways, and to review and approve previously filed plats in accordance with the requirements of Village Law § 7-728 et seq. Whenever the particular circumstances of a proposed development require compliance with either the special use procedure in this chapter or the requirements of the land subdivision regulations of Village Law § 7-728 et seq., the Planning Board shall attempt to integrate, as appropriate, site plan review as required by this chapter with the procedural and submission requirements for such other regulations.				
<b>Site Plan Code</b>	Yes	Chapter 245 Article 6, Site Plan Review	Local	Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The Planning Board is hereby authorized and directed to review and approve, approve with modifications, or disapprove site plans. All site plans, except one- and two-family owner-occupied dwellings, shall be subject to review by the Planning Board and shall show all structures, roadways, pathways, parking areas, recreation areas, utility and exterior lighting installations and landscaping on the site, all existing structures and usages within 100 feet of the site boundaries and any other elements as may be deemed essential by the Planning Board.				
<b>Stormwater Management Code</b>	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
<b>Post-Disaster Recovery/ Reconstruction Code</b>	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
<b>Real Estate Disclosure Requirements</b>	Yes	Property Condition Disclosure Act, NY Code - Article 14 §460-467	State	NYS Department of State, Real Estate Agent
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
In addition to facing potential liability for failing to disclose under the exceptions to “caveat emptor,” a home seller must make certain disclosures under the law or pay a credit of \$500 to the buyer at closing. While the PCDA requires a seller to complete a standardized disclosure statement and deliver it to the buyer before the buyer signs the final purchase contract, in practice, most home sellers in New York opt not to complete the statement and instead pay the credit.				
<b>Growth Management</b>	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
<b>Environmental Protection Ordinance(s)</b>	Yes	Chapter 112, 1984 as amended	Local	Board of Trustees, Board of Appeals or Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
Implements, for the Village of Waterloo, the provisions of the State Environmental Quality Review Regulations, thereby incorporating environmental factors into existing planning and decision-making processes.				
<b>Flood Damage Prevention Ordinance</b>	Yes	Chapter 124, Flood Damage Prevention	Local	Code Administration and Enforcement
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				



	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Individual / Department / Agency Responsible
<p>Promote the public health, safety, and general welfare and to minimize public and private losses due to flood conditions in specific areas by provisions designed to:</p> <ul style="list-style-type: none"> <li>A. Regulate uses which are dangerous to health, safety, and property due to water or erosion hazards or which result in damaging increases in erosion or in flood heights or velocities.</li> <li>B. Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction.</li> <li>C. Control the alteration of natural floodplains, stream channels and natural protective barriers which are involved in the accommodation of floodwaters.</li> <li>D. Control filling, grading, dredging and other development which may increase erosion or flood damages.</li> <li>E. Regulate the construction of flood barriers which will unnaturally divert floodwaters, or which may increase flood hazards to other lands.</li> <li>F. Qualify for and maintain participation in the National Flood Insurance Program.</li> </ul>				
<b>Wellhead Protection</b>	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
<b>Emergency Management Ordinance</b>	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
<b>Climate Change Ordinance</b>	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
<b>Other</b>	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
<b>Planning Documents</b>				
<b>General/Comprehensive Plan</b>	Yes	Village of Waterloo Comprehensive Plan, 2017	Local	Village Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
Guides the development of the Village's natural and built environment and sustain and improve its quality of life. This Comprehensive Plan recognizes the importance of sustainability and provides Waterloo with the tools to move into the future responsibly, as well as retain the small-town qualities that the citizens hold to such a high standard.				
<b>Capital Improvement Plan</b>	Yes	Village of Waterloo Comprehensive Plan, 2017	Local	Village Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
Guides the development of the Village's natural and built environment and sustain and improve its quality of life. This Comprehensive Plan recognizes the importance of sustainability and provides Waterloo with the tools to move into the future responsibly, as well as retain the small-town qualities that the citizens hold to such a high standard.				
<b>Disaster Debris Management Plan</b>	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
<b>Floodplain Management or Watershed Plan</b>	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				



	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Individual / Department / Agency Responsible
N/A				
<b>Stormwater Management Plan</b>	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
<b>Open Space Plan</b>	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
<b>Urban Water Management Plan</b>	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
<b>Habitat Conservation Plan</b>	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
<b>Economic Development Plan</b>	Yes	Village of Waterloo Comprehensive Plan, 2017	Local	Village Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
Guides the development of the Village's natural and built environment and sustain and improve its quality of life. This Comprehensive Plan recognizes the importance of sustainability and provides Waterloo with the tools to move into the future responsibly, as well as retain the small-town qualities that the citizens hold to such a high standard.				
<b>Community Wildfire Protection Plan</b>	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
<b>Community Forest Management Plan</b>	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
<b>Transportation Plan</b>	Yes	Village of Waterloo Comprehensive Plan, 2017	Local	Village Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The assessment of the transportation system within the Village of Waterloo is considered from two perspectives. First, logistical information identifying exactly what the system is, roads, railroad, trails, and sidewalks; who has jurisdiction over these elements, County, State, or Village; and who uses them, public or private. Second, the condition of each component must be considered and evaluated.				
<b>Agriculture Plan</b>	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				
<b>Climate Action/ Resiliency/Sustainability Plan</b>	Yes	Village of Waterloo Comprehensive Plan, 2017	Local	Village Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				



	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Individual / Department / Agency Responsible
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Guides the development of the Village's natural and built environment and sustain and improve its quality of life. This Comprehensive Plan recognizes the importance of sustainability and provides Waterloo with the tools to move into the future responsibly, as well as retain the small-town qualities that the citizens hold to such a high standard.

<b>Tourism Plan</b>	No	-	-	-
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*How has or will this be integrated with the HMP and how does this reduce risk?*  
N/A

<b>Business/ Downtown Development Plan</b>	Yes	Village of Waterloo Downtown Needs Assessment, 2012	Local	Village Board
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*How has or will this be integrated with the HMP and how does this reduce risk?*  
Identifies five (5) priority projects that the Village can undertake to strengthen its Downtown to capitalize on future opportunities. Creates a document that would align Waterloo with the goals and implementation measures put forth in the Finger Lakes Regional Economic Development Council's Strategic Plan.

<b>Other</b>	No	-	-	-
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*How has or will this be integrated with the HMP and how does this reduce risk?*  
N/A

**Response/Recovery Planning**

<b>Emergency Operations Plan</b>	Yes	Seneca County Comprehensive Emergency Management Plan, February 2021	County	Seneca County Emergency Management Office
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*How has or will this be integrated with the HMP and how does this reduce risk?*  
The plan provides general all-hazards management guidance, using existing organizations, to allow the County to meet its responsibilities before, during and after an emergency. The purpose of this plan is, through implementation of risk reduction measures before an emergency occurs, timely and effective Response during an emergency, and provision of both short- and long-term recovery assistance afterward, to save lives and minimize property damage in the County.

<b>Continuity of Operations Plan</b>	No	-	-	-
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*How has or will this be integrated with the HMP and how does this reduce risk?*  
N/A

<b>Substantial Damage Response Plan</b>	No	-	-	-
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*How has or will this be integrated with the HMP and how does this reduce risk?*  
N/A

<b>Threat &amp; Hazard Identification &amp; Risk Assessment (THIRA)</b>	No	-	-	-
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*How has or will this be integrated with the HMP and how does this reduce risk?*  
N/A

<b>Post-Disaster Recovery Plan</b>	No	-	-	-
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*How has or will this be integrated with the HMP and how does this reduce risk?*  
N/A



	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Individual / Department / Agency Responsible
<b>Public Health Plan</b>	Yes	Seneca County Pandemic Plan, February 2021	County	Seneca County Emergency Management Office
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
The plan was developed based on best practices and guidance available largely as a result of the SARS-CoV-2 Pandemic. The plan is intended to provide ongoing guidance for the current pandemic as well as future guidance for any other infectious disease outbreaks requiring a state and/or county emergency declaration.				
<b>Other</b>	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
N/A				

### 16.3.2 Development and Permitting Capability

Table 16-3 summarizes the capabilities of the Village of Waterloo to oversee and track development.

Table 16-3. Development and Permitting Capability

Indicate if your jurisdiction implements the following	Yes/No	Comment:
Do you issue development permits?	No	Seneca County’s Code Enforcement Office issues construction permits for the Village.
<ul style="list-style-type: none"> <li>If you issue development permits, what department is responsible?</li> </ul>	N/A	-
<ul style="list-style-type: none"> <li>If you do not issue development permits, what is your process for tracking new development?</li> </ul>	N/A	The Village of Waterloo’s Zoning Enforcement Officer works hand-in-hand with Seneca County’s Code Enforcement Office to ensure new development is recorded and tracked.
Are permits tracked by hazard area? (For example, floodplain development permits.)	Yes	The Village of Waterloo’s Zoning Enforcement Officer works hand-in-hand with Seneca County’s Code Enforcement Office to ensure new development is recorded and tracked.
Do you have a buildable land inventory?	Yes	-
<ul style="list-style-type: none"> <li>If you have a buildable land inventory, please describe</li> </ul>	N/A	The buildable land inventory is recorded in the Village’s Comprehensive Plan.
Describe the level of build-out in your jurisdiction.	N/A	The Village is mostly built out, with limited space for future development. According to its 2017 Comprehensive Plan, the Village has 9.5% of its total land (114.6 acres, 134 parcels) identified as vacant.

### 16.3.3 Administrative and Technical Capability

Table 16-4 summarizes potential staff and personnel resources available to the Village of Waterloo and their current responsibilities that contribute to hazard mitigation.



Table 16-4. Administrative and Technical Capabilities

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
<b>Administrative Capability</b>		
Planning Board	Yes	The Planning Board may review and make recommendations on a proposed Village Comprehensive Plan. In addition, the Planning Board has the authority to make such investigations, maps, reports, and recommendations in connection with the planning and development of the Village.
Zoning Board of Adjustment	Yes	The Zoning Board of Appeals may review any order, requirement, decision, or determination made by the Code Administration Officer.
Planning Department	No	-
Mitigation Planning Committee	No	-
Environmental Board/Commission	No	-
Open Space Board/Committee	No	-
Economic Development Commission/Committee	No	-
Public Works/Highway Department	Yes	Public works is responsible for the maintenance and repairs to the stormwater system in the Village.
Construction/Building/Code Enforcement Department	Yes	The Village of Waterloo's Zoning Enforcement Officer works hand-in-hand with Seneca County's Code Enforcement Office. The Enforcement Officer also ensures compliance with and recommends changes to the Village code.
Emergency Management/Public Safety Department	Yes	County Emergency Manager, Village Police Department, Waterloo Volunteer Fire Company
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	No	-
Mutual aid agreements	Yes	Agreements in place for emergency response with surrounding municipalities
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	No	-
Other	No	-
<b>Technical/Staffing Capability</b>		
Planners or engineers with knowledge of land development and land management practices	Yes	Contracted
Engineers or professionals trained in building or infrastructure construction practices	Yes	Seneca County Code Enforcement Office
Planners or engineers with an understanding of natural hazards	No	-
Staff with expertise or training in benefit/cost analysis	No	-



Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
Professionals trained in conducting damage assessments	No	-
Personnel skilled or trained in GIS and/or Hazus applications	No	-
Staff that work with socially vulnerable populations or underserved communities	No	-
Environmental scientist familiar with natural hazards	No	-
Surveyor(s)	No	-
Emergency Manager	Yes	County Emergency Manager
Grant writer(s)	Yes	Village Administrator and hired professionals
Resilience Officer	No	-
Other (this could include stormwater engineer, environmental specialist, etc.)	No	-

### 16.3.4 Fiscal Capability

Table 16-5 summarizes financial resources available to the Village of Waterloo.

Table 16-5. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use? (Yes/No)
Community Development Block Grants (CDBG, CDBG-DR)	Yes
Capital improvement project funding	No
Authority to levy taxes for specific purposes	No
User fees for water, sewer, gas, or electric service	Yes
Impact fees for homebuyers or developers of new development/homes	No
Stormwater utility fee	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	No
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	No
Other federal or state funding programs	Yes
Open Space Acquisition funding programs	No
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	No

### 16.3.5 Education and Outreach Capability

Table 16-6 summarizes the education and outreach resources available to the Village of Waterloo.



Table 16-6. Education and Outreach Capabilities

Outreach Resources	Available? (Yes/No)	Comment:
Public information officer or communications office	No	-
Personnel skilled or trained in website development	Yes	Contracted
Hazard mitigation information available on your website	Yes	The main webpage lists possible avenues for homeowners to have properties rehabilitated from flood events.
Social media for hazard mitigation education and outreach	Yes	The Village has a Facebook page which can be utilized for hazard mitigation education and outreach
Citizen boards or commissions that address issues related to hazard mitigation	No	-
Warning systems for hazard events	Yes	The Seneca County Wireless Emergency Notification System provides emergency alerts to residents across Seneca County. Residents can also sign up for NY Alert.
Natural disaster/safety programs in place for schools	No	-
Organizations that conduct outreach to socially vulnerable populations and underserved populations	No	-
Does the jurisdiction have any public outreach mechanisms / programs in place to inform citizens on natural hazards, risk, and ways to protect themselves during such events?	No	-
If yes, please describe.	N/A	-

### 16.3.6 Community Classifications

Table 16-7 summarizes classifications for community programs available to the Village of Waterloo.

Table 16-7. Community Classifications

Program	Participating? (Yes/No)	Classification	Date Classified
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	No	-	-
National Weather Service StormReady Certification	Yes	Seneca County is StormReady	N/A
Firewise Communities classification	No	-	-
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable



— = Unavailable

### 16.3.7 Adaptive Capacity

Adaptive capacity is defined as “the ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or respond to consequences” (IPCC 2022). Each jurisdiction has a unique combination of capabilities to adjust to, protect from, and withstand a future hazard event, future conditions, and changing risk. Table 16-8 summarizes the adaptive capacity for each identified hazard of concern and the Village’s capability to address related actions using the following classifications:

- Strong: Capacity exists and is in use.
- Moderate: Capacity might exist; but is not used or could use some improvement.
- Weak: Capacity does not exist or could use substantial improvement

Table 16-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Drought	Moderate
Earthquake	Moderate
Extreme Temperature	Moderate
Flood	Moderate
Landslide	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate

## 16.4 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain, including current and future compliance with the National Flood Insurance Program (NFIP). The floodplain administrator listed in is responsible for maintaining this information.

### 16.4.1 NFIP Statistics

Table 16-9 summarizes the NFIP policy and claim statistics for the Village of Waterloo.

Table 16-9. Village of Waterloo NFIP Summary of Policy and Claim Statistics

# Policies	4
# Claims (Losses)	2
Total Loss Payments	\$2,147.53
# Repetitive Loss Properties (NFIP definition)	0
# Repetitive Loss Properties (FMA definition)	0
# Severe Repetitive Loss Properties	0



*NFIP Definition of Repetitive Loss: The NFIP defines a repetitive loss property as any insurable building for which two or more claims of more than \$1,000 were paid by the NFIP within any rolling 10-year period since 1978.*

*FMA Definition of Repetitive Loss: FEMA’s Flood Mitigation Assistance (FMA) program defines a repetitive loss property as any insurable building that has incurred flood-related damage on two occasions, in which the cost of the repair, on average, equaled or exceeded 25 percent of the market value of the structure at the time of each such flood event.*

*Definition of Severe Repetitive Loss: A residential property covered under an NFIP flood insurance policy and: (a) That has at least four NFIP claim payments over \$5,000 each, and the cumulative amount of such claims payments exceeds \$20,000; or (b) For which at least two separate claims payments have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building. At least two of the claims must have occurred within any 10-year period, more than 10 days apart.*

Source: FEMA 2024

## 16.4.2 Flood Vulnerability Summary

Table 16-10 provides a summary of the NFIP program in the Village of Waterloo.

Table 16-10. NFIP Summary

NFIP Topic	Comments
<b>Flood Vulnerability Summary</b>	
Describe areas prone to flooding in your jurisdiction. <ul style="list-style-type: none"> <li>Do you maintain a list of properties that have been damaged by flooding?</li> </ul>	<p>Flooding occurs near the High School ( ) and around the County Fairgrounds (Swift Street, East Elisha Street).</p> <p>No list of damaged properties is maintained.</p>
Do you maintain a list of property owners interested in flood mitigation? <ul style="list-style-type: none"> <li>How many homeowners and/or business owners are interested in mitigation (elevation or acquisition)?</li> </ul>	<p>A list of property owners interested in flood mitigation is not maintained.</p> <p>Unknown.</p>
Are any RiskMAP projects currently underway in your jurisdiction? <ul style="list-style-type: none"> <li>If so, state what projects are underway.</li> </ul>	No
How do you make Substantial Damage determinations? <ul style="list-style-type: none"> <li>How many were declared for recent flood events in your jurisdiction?</li> </ul>	Seneca County Building Codes Enforcement
How many properties have been mitigated (elevation or acquisition) in your jurisdiction? <ul style="list-style-type: none"> <li>If there are mitigation properties, how were the projects funded?</li> </ul>	None
Do your flood hazard maps adequately address the flood risk within your jurisdiction? <ul style="list-style-type: none"> <li>If not, state why.</li> </ul>	Yes
<b>NFIP Compliance</b>	
What local department is responsible for floodplain management?	Seneca County Building Codes Enforcement
Are any certified floodplain managers on staff in your jurisdiction?	No
Do you have access to resources to determine possible future flooding conditions from climate change?	Yes – various online resources from FEMA, State agencies, etc.



NFIP Topic	Comments
Does your floodplain management staff need any assistance or training to support its floodplain management program? <ul style="list-style-type: none"> <li>If so, what type of assistance/training is needed?</li> </ul>	Yes, any available training to continue education.
Provide an explanation of NFIP administration services you provide (e.g., permit review, GIS, education/outreach, inspections, engineering capability)	The Village relies on the Seneca County Building Codes Enforcement for NFIP services.
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	Seneca County Building Codes Enforcement
What are the barriers to running an effective NFIP program in the community, if any?	Staffing and funds.
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? <ul style="list-style-type: none"> <li>If so, state the violations.</li> </ul>	No
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	Unknown
What is the local law number or municipal code of your flood damage prevention ordinance? <ul style="list-style-type: none"> <li>What is the date that your flood damage prevention ordinance was last amended?</li> </ul>	Chapter 124, Flood Damage Prevention September 14, 1987
Does your floodplain management program meet or exceed minimum requirements? <ul style="list-style-type: none"> <li>If exceeds, in what ways?</li> </ul>	The Village's floodplain management program meets the minimum requirements.
Are there other local ordinances, plans or programs (e.g., site plan review) that support floodplain management and meeting the NFIP requirements? For instance, does the planning board or zoning board consider efforts to reduce flood risk when reviewing variances such as height restrictions?	Yes, the planning and zoning boards both consider efforts to reduce flood risk when making determinations on cases.
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	Yes, the Village would be interested in learning more information about the CRS program.

## 16.5 GROWTH/DEVELOPMENT TRENDS

Understanding how past, current, and projected development patterns have or are likely to increase or decrease risk in hazard areas is a key component to appreciating a jurisdiction's overall risk to its hazards of concern. Recent and expected future development trends, including major residential/commercial development and major infrastructure development, are summarized in Table 16-11 through Table 16-13.

Table 16-11. Number of Building Permits for New Construction Issued Since the Previous HMP

	New Construction Permits Issued			
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	Total
<b>2018</b>				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0



	New Construction Permits Issued			
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	Total
<b>2019</b>				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
<b>2020</b>				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
<b>2021</b>				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
<b>2022</b>				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0

SFHA = Special Flood Hazard Area (1% flood event)

Table 16-12. Recent Major Development and Infrastructure from 2019 to Present

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zones*	Description / Status of Development
None Identified					

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

Table 16-13. Known or Anticipated Major Development and Infrastructure in the Next Five Years

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zones*	Description / Status of Development
None Identified					

## 16.6 JURISDICTIONAL RISK ASSESSMENT

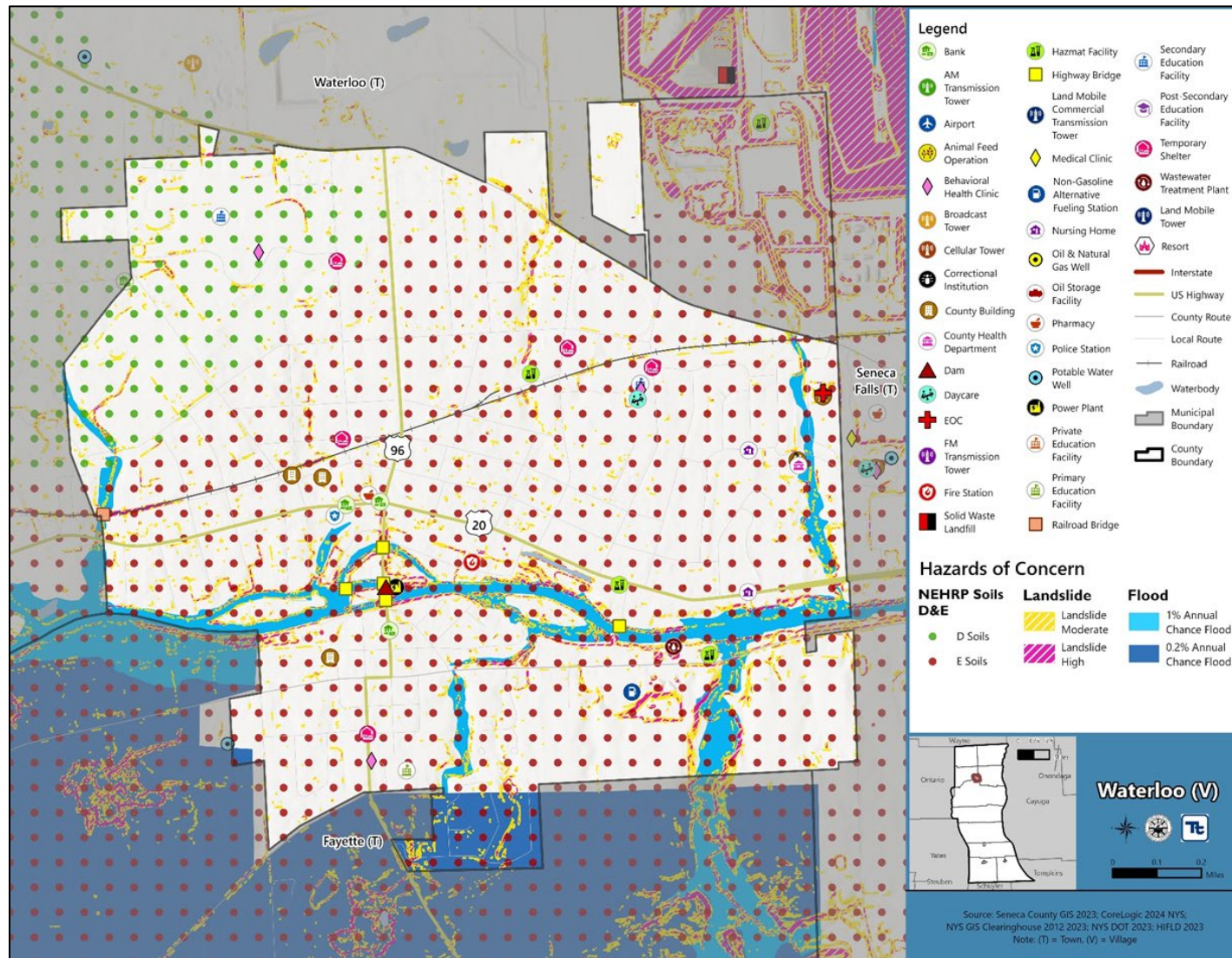
The hazard profiles in Volume I provide detailed information regarding each planning partner’s vulnerability to the identified hazards, including summaries of the Village of Waterloo’s risk assessment results and data used to determine the hazard ranking. Key local risk assessment information is presented below.

### 16.6.1 Hazard Area

Hazard area extent and location maps provided below illustrate the probable areas impacted within the Village based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. A map for the hazards that have impacted the Village of Waterloo is included below.



Figure 16-1. Village of Waterloo Hazard Area Extent and Location Map



Note: The shown flood hazard area is limited to the FEMA-defined flood hazard areas. Areas of localized flooding are not reflected in the above Figure.



### 16.6.2 Hazard Event History

The history of natural and non-natural hazard events in the Village of Waterloo is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 16-14 provides details on loss and damage in the Village of Waterloo during hazard events since the last hazard mitigation plan update.

Table 16-14. Hazard Event History in the Village of Waterloo

Dates of Event	Event Type (Disaster Declaration)	County Designated?	Summary of Event	Summary of Damage and Losses in the Village of Waterloo
August 13 - 15, 2018	Flood (DR- 4397)	Yes	A slow-moving storm tracked north from New Jersey to northern New York. This system triggered several rounds of heavy rain producing thunderstorms which caused severe flash flooding and major damages in several locations.	Basement flooding was experienced. Minimal roadway flooding and no road closures.
August 30, 2022	Severe Storm, Flood	No	Storms produced strong, damaging winds and heavy rain. Localized flooding occurred throughout Seneca County.	Basement flooding was experienced. Minimal roadway flooding and no road closures.
January 20, 2020 - May 11, 2023	Pandemic (DR-4480, EM-3434)	Yes	The coronavirus pandemic resulted in roughly 8,000 cases and 100 attributed deaths as of summer 2023.	The Village instituted masking and social distancing mandates.

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

### 16.6.3 Hazard Ranking and Vulnerabilities

The hazard profiles in Volume I have detailed information regarding each planning partner’s vulnerability to the identified hazards. The following presents key risk assessment results for the Village of Waterloo.

#### Hazard Ranking

The participating jurisdictions have differing degrees of vulnerability to the hazards of concern, so each jurisdiction ranked its own degree of risk to each hazard. The community-specific hazard ranking is based on problems and impacts identified by the risk assessment presented in Volume I. The ranking process involves an assessment of the likelihood of occurrence for each hazard; the potential impacts of the hazard on people, property, and the economy; community capabilities to address the hazard; and changing future climate conditions. The Village of Waterloo reviewed the County hazard ranking and individual results to assess the relative risk of the hazards of concern to the community. During the review of the hazard ranking, the Village indicated the following:

- The Village elected to change dam failure from Medium to High due to failing infrastructure at Waterloo Mudlock.
- The Village elected to change flood from Medium to High due to localized flooding and drainage issues.



Table 16-15 shows the Village of Waterloo’s final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 16-15. Hazard Ranking Input

Hazard	Rank
Dam Failure	High
Drought	Low
Earthquake	Medium
Extreme Temperature	Medium
Flood	High
Landslide	Low
Severe Weather	High
Severe Winter Weather	High

*Note: The scale is based on the hazard rankings established in Volume I, modified as appropriate based on review by the jurisdiction*

In addition to critical facilities that are exposed to flooding, the following high hazard dam is located in the Village of Waterloo:

- Waterloo Dam

### Critical Facilities

Table 16-16 identifies critical facilities in the community located in the 1 percent and 0.2 percent annual chance floodplains.

Table 16-16. Critical Facilities Flood Exposure

Name	Type	Exposure		Addressed by Proposed Action	Already Protected to 0.2% Flood Level (describe protections)
		1% Event	0.2% Event		
Highway Bridge - 1035070	Highway Bridge	X	X	2025-WaterlooV-12	-
Highway Bridge - 1035080	Highway Bridge	X	X	2025-WaterlooV-12	-
Highway Bridge - 4435100	Highway Bridge	X	X	2025-WaterlooV-12	-
Highway Bridge - 4435140	Highway Bridge	X	X	2025-WaterlooV-12	-
Railroad Bridge - W1109_NY81658	Railroad Bridge	X	X	2025-WaterlooV-12	-
Waterloo Dam	Dam	X	X	2025-WaterlooV-12	-
WATERLOO HYDROELECTRIC PROJECT	Power Plant	X	X	2025-WaterlooV-12	-

Source: Seneca County GIS 2023, NYS GIS Clearinghouse 2023, NYSDOH 2023, NYSDOT 2023, HIFLD 2023

### 16.6.4 Identified Issues

After review of the Village of Waterloo’s hazard event history, hazard rankings, hazard location, and current capabilities, the Village of Waterloo identified the following vulnerabilities within the community:



- The Village of Waterloo experiences excessive flooding and drainage issues due to deteriorating and aging infrastructure which compromises the safety and public health of residents and tourists. The drainage system in the Village may have components which are not capable of handling excess flood waters and may contribute to instances of flooding. Clark Street has flooding issues due to poor drainage systems.
- Locust Street Bridge was connected to lock system to canal which allows water to flow to energy plant and back out. During periods of rain, water will overflow the lock at the bridge and creep up toward the energy plant. The bridge is not currently used by either vehicular or pedestrian traffic; vegetation has overgrown the points of entry to the bridge, and it has been marked as a dead end at either entry point.
- The sewer plant on East River Street is located on the south side of the canal. The existing by-pass allows water to channel through the sewer plant and is released into the canal. The removal of this by-pass would result in the persistent flooding on the south side of the Village, including along East River Street.
- There are flood prone roadways in the Village, including Stark Street and Hecker Road by the Middle and High Schools, and Swift and E. Wright Streets near the County Fairgrounds. Sewer and drainage gates contribute greatly to the flooding of roadways in the Village.
- There is a need for a singular Public Safety Campus, where all public safety facilities are located in one location. Currently, the structural integrity of many public safety buildings are poor, and other facilities are located in areas susceptible to flooding conditions. Furthermore, the Village does not have an Emergency Operation Center (EOC) to operate out of in times of emergency.
- The Village does not have any organizations that conduct outreach to socially vulnerable populations and underserved populations relating to the identified hazards of concern. Identifying, communicating, and educating vulnerable populations can increase the resiliency of the Village through the reduction of long-risk risks associated with each hazard of concern. Furthermore, emergency responders will be able to prioritize assistance, when feasible, in an emergency to help those who need it most.
- The Village currently does not have a comprehensive education and outreach program. There is a need to educate residents and businesses about storm mitigation, preparation, response, and recovery. Additionally, the Village has a need to further explain flood insurance to community members. Identifying, communicating, and educating residents and visitors can increase the resiliency of the Village through the reduction of long-risk risks associated with each hazard of concern.
- There are repetitive loss properties in the Village. Repetitively flooded properties place an undue stress on the property owner and Village and efforts should be made to mitigate them.
- The Village does not have a formalized list of damaged properties or property owners which may be interested in flood mitigation measures, such as elevation or acquisition. The development of this capability can provide a potential list of properties which may be eligible for flood mitigation measures, including acquisition, elevation, or relocation.
- The County issues the municipality's building permits. The municipality does not have a Substantial Damage Management Plan in place, nor do they have a formal process in place when conducting substantial damage determinations. The municipality is in need of a formal process and plan to provide a framework for conducting such inspections and determinations.
- The Village is not currently in the CRS program. The Village needs to identify whether joining the program will be beneficial to the community and its residents.
- Critical facilities located in the floodplain are not only susceptible to flood damage but also create unnecessary complications for the municipality during an emergency event and post-disaster recovery. The following critical facilities are located in the special flood hazard area:
  - Highway Bridge - 1035070



- Highway Bridge - 1035080
- Highway Bridge - 4435100
- Highway Bridge - 4435140
- Railroad Bridge - W1109\_NY81658
- Waterloo Dam
- WATERLOO HYDROELECTRIC PROJECT
- Waterloo Dam is a Class I High Hazard Dam that is located on the Seneca River where it meets the Seneca Canal. The dam is owned by the New York State Canal Corporation and leased to C-S Canals LLC. Failure of the dam could result in inundation of densely populated areas, critical facilities and community lifelines, State Route 96, and local roadways including Locust Street, Huff Street, and Fayette Street. Although the dam was last inspected in 2011, the risk of dam failure warrants an engineering evaluation to determine if retrofits of the dam would result in safer conditions. C-S Canals LLC notes its regular inspections and maintenance have not revealed any outstanding, needed repairs or improvements.

## 16.7 MITIGATION STRATEGY AND PRIORITIZATION

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This section discusses the status of mitigation actions from the previous HMP, describes proposed hazard mitigation actions, and prioritizes actions to address over the next five years.

### 16.7.1 Past Mitigation Action Status

Table 16-17 indicates progress on the Village's mitigation strategy identified in the 2019 HMP. Actions that are still recommended but not completed or that are in progress are carried forward and combined with new actions as part of the mitigation strategy for this plan update. Previous actions that are now ongoing programs and capabilities are indicated as such and are presented in the capability assessment earlier in this annex.



Table 16-17. Status of Previous Mitigation Actions

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2025 HMP or Discontinue 2. If including action in the 2025 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
1	Village Drainage System Improvements	Flooding	Public Works Superintendent, Mayor, Village Board	<p>Problem: The drainage system in the Village may have components which are not capable of handling excess flood waters and may contribute to instances of flooding.</p> <p>Solution: Continue to implement improvements to the village drainage system.</p>	<p>1. In Progress 2. The Village is actively looking for funding opportunities to support this action.</p>	<p>1. Include 2. Not applicable 3. Not applicable</p>
2	Tree Maintenance Program	Flooding, Ice Storm, Severe Weather, Winter Weather	Public Works Superintendent, Mayor, Village Board	<p>Problem: Tree limbs and vegetative debris clog stormwater infrastructure and contribute to occurrences of flooding in the Village.</p> <p>Solution: Implement a tree maintenance program to regularly trim trees and collect debris which will reduce drain systems clogging that contributes to flooding and prevent losses associated with ice storms and power outages. The program will also include tree planting, emphasizing species that are best resistant to natural hazards.</p>	<p>1. Ongoing Capability 2. Vegetative maintenance is performed on an as-needed basis.</p>	<p>1. Discontinue 2. Not applicable 3. Capability</p>



Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2025 HMP or Discontinue 2. If including action in the 2025 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
3	Clark Street drainage improvements	Flooding	Public Works Superintendent, Village Board	<p>Problem: Clark Street has flooding issues due to poor drainage systems.</p> <p>Solution: Install large drain pipes with catch basins on Clark Street from Elizabeth to Main Street and parallel along Main Street to Water Street and the Canal. This will improve stormwater management in a 35-acre drainage basin.</p>	<p>1. In Progress</p> <p>2. The Village is actively looking for funding opportunities to support this action.</p>	<p>1. Include</p> <p>2. Not applicable</p> <p>3. Not applicable</p>



### 16.7.2 Additional Mitigation Efforts

In addition to the mitigation initiatives completed in Table 16-17, the Village of Waterloo identified the following mitigation efforts completed since the last HMP:

- Awarded a Green Initiatives grant for a study on drainage issues in the Village

Since the adoption of the County’s first HMP, the Village of Waterloo has made significant mitigation progress in the following areas:

- Flood Mitigation

### 16.7.3 Proposed Hazard Mitigation Actions for the HMP Update

The Village of Waterloo participated in a mitigation action workshop in September 2024 and was provided the following FEMA publications to use as a resource as part of its comprehensive review of all possible activities and mitigation measures to address hazards of concern:

- FEMA 551 “Selecting Appropriate Mitigation Measures for Floodprone Structures” (March 2007)
- FEMA “Mitigation Ideas—A Resource for Reducing Risk to Natural Hazards” (January 2013).

The action worksheets included at the end of this annex list the mitigation actions that the Village of Waterloo would like to pursue in the future to reduce the effects of hazards. The actions are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in Village priorities.

Table 16-18 indicates the range of proposed mitigation action categories. The four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table to further demonstrate the wide range of activities and mitigation measures selected.

Volume I identifies 14 evaluation criteria for prioritizing the mitigation actions. To assist with rating each mitigation action as high, medium, or low priority, a numeric rank is assigned (-1, 0, or 1) for each of the evaluation criteria. Table 16-19 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.



Table 16-18. Analysis of Mitigation Actions by Hazard and Category

Hazard	Actions That Address the Hazard, by Action Category									
	FEMA				CRS					
	LPR	SIP	NSP	EAP	PR	PP	PI	NR	SP	ES
Dam Failure	X	X	-	X	X	X	X	-	-	X
Drought	X	X	-	X	X	X	X	-	-	X
Earthquake	X	X	-	X	X	X	X	-	-	X
Extreme Temperatures	X	X	-	X	X	X	X	-	-	X
Flood	X	X	-	X	X	X	X	-	X	X
Landslide	X	X	-	X	X	X	X	-	-	X
Severe Storm	X	X	-	X	X	X	X	-	X	X
Severe Winter Storm	X	X	-	X	X	X	X	-	-	X

*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 structures to reduce the impact of hazards.

*Natural Systems Protection (NSP)*—These are actions that minimize damage and losses and preserve or restore the functions of natural systems.

*Education and Awareness Programs (EAP)*—These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities

*Preventative Measures (PR)*—Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.

*Property Protection (PP)*—These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.

*Public Information (PI)*—Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.

*Natural Resource Protection (NR)*—Actions that minimize hazard loss and preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.

*Structural Flood Control Projects (SP)*—Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.

*Emergency Services (ES)*—Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities



Table 16-19. Summary of Prioritization of Actions

Project Number	Project Name	Scores for Evaluation Criteria														High / Medium / Low	
		Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Other Local Objectives		Total
2025-WaterlooV-01	Stormwater Infrastructure Upgrades	1	1	1	1	1	0	1	1	1	1	1	1	1	0	12	High
2025-WaterlooV-02	Locust Street Bridge	1	1	1	0	1	0	1	1	1	1	1	1	1	0	11	High
2025-WaterlooV-03	East River Street By-Pass	1	1	1	1	1	0	1	1	1	0	1	1	1	0	11	High
2025-WaterlooV-04	Flood Prone Road Mitigation Measures	1	1	1	1	1	0	1	1	1	0	1	1	0	1	11	High
2025-WaterlooV-05	Public Safety Campus	0	1	1	1	1	0	0	1	1	1	0	1	1	1	10	Medium
2025-WaterlooV-06	Socially Vulnerable Populations Outreach	1	0	1	1	1	1	0	1	1	1	1	1	1	1	12	High
2025-WaterlooV-07	Public Education and Outreach	1	1	1	1	1	1	0	1	1	1	1	1	0	1	12	High
2025-WaterlooV-08	Repetitive and Severe Repetitive Loss Properties	1	1	1	1	1	0	1	1	1	1	1	1	0	1	12	High
2025-WaterlooV-09	Flood Mitigation Interest	1	1	1	1	1	1	1	1	1	0	1	1	1	1	13	High
2025-WaterlooV-10	Substantial Damage Management Plan	0	1	1	1	1	1	0	1	1	1	1	1	1	0	11	High
2025-WaterlooV-11	Community Rating System (CRS) Program	0	1	1	1	1	1	0	1	1	0	1	1	0	1	10	Medium
2025-WaterlooV-12	Critical Facilities in the Floodplain	1	1	1	1	1	0	0	1	1	1	1	1	1	0	11	High
2025-WaterlooV-13	Waterloo Dam Rehab	1	1	1	1	0	0	1	1	1	0	1	1	1	1	11	High

Note: Volume I, Section 16 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14).



Action 2025-WaterlooV-01. Stormwater Infrastructure Upgrades

Lead Agency:	Village Department of Public Works	
Supporting Agencies:	Village Engineering	
Hazard(s) of Concern:	<input type="checkbox"/> Dam Failure <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm
Description of the Problem:	The Village of Waterloo experiences excessive flooding and drainage issues due to deteriorating and aging infrastructure which compromises the safety and public health of residents and tourists. The drainage system in the Village may have components which are not capable of handling excess flood waters and may contribute to instances of flooding. Clark Street has flooding issues due to poor drainage systems.	
Description of the Solution:	The Village engineer will complete an engineering survey of culverts that are undersized and contribute to flooding to determine the proper size necessary to provide stormwater capacity. The Village Department of Public Works will complete the necessary upsizing for those culverts noted to be undersized. Install large drain pipes with catch basins on Clark Street from Elizabeth to Main Street and parallel along Main Street to Water Street and the Canal. This will improve stormwater management in a 35-acre drainage basin.	
Estimated Cost:	High	
Potential Funding Sources:	HMGP, BRIC, CHIPS, Village Budget	
Implementation Timeline:	Within 4 years	
Goals Met:	1, 2, 3, 4, 5	
Benefits:	Overall flooding will be reduced, which will result in less frequency of road closures and reduced damage occurring to culverts and roadways during severe events. Businesses are likely to remain in place if they are able to remain open, or re-open sooner following a flood.	
Impact on Socially Vulnerable Populations:	Areas that were previously vulnerable to frequency or severe flooding events will be less likely to be impacted by flooding events.	
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.	
Impact on Critical Facilities/Lifelines:	Transportation routes are more likely to remain open, evacuation routes will remain intact, and access to health and medical facilities will be maintained, both for healthcare workers and the population who requires treatment for injuries and illness.	
Impact on Capabilities:	Identifying the culverts that are at greatest risk of damage or failure can allow for resource staging to take place where the need is greatest ahead of a flood event. Also, the action is likely to result in maintained access for first responders.	
Climate Change Considerations:	Climate change is likely to result in more frequent and severe rainfall events. This action upsizes culvert sizes to meet changing stormwater needs as the result of climate change.	
Mitigation Category	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Priority	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium
Alternatives	<b>Action</b>	
	No action	
	Remove roadway	
	Raingardens	
		<b>Evaluation</b>
		Current problem continues
		Roadway cannot be removed
		Raingardens are unlikely to be able to absorb enough stormwater to prevent flooding during severe rainfall events.



Action 2025-WaterlooV-02. Locust Street Bridge

Lead Agency:	Village Administration	
Supporting Agencies:	NYSDOT, NYS Canal Corporation	
Hazard(s) of Concern:	<input type="checkbox"/> Dam Failure <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm
Description of the Problem:	Locust Street Bridge was connected to lock system to canal which allows water to flow to energy plant and back out. During periods of rain, water will overflow the lock at the bridge and creep up toward the energy plant. The bridge is not currently used by either vehicular or pedestrian traffic; vegetation has overgrown the points of entry to the bridge, and it has been marked as a dead end at either entry point.	
Description of the Solution:	Initiate meetings with NYSDOT personnel to identify and discuss potential projects to mitigate the flood risk from the Locust Street bridge. Conduct a study to identify which potential solutions may garnish the desired outcome. Potential projects may include: <ul style="list-style-type: none"> <li>• the removal of the Locust Street bridge</li> <li>• the conversion of the bridge into a pedestrian bridge</li> <li>• dredging portions of the canal</li> </ul>	
Estimated Cost:	Medium	
Potential Funding Sources:	BRIC, HMGP, BRIDGE NY	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 3, 4, 5	
Benefits:	This action will encourage strong communication from the Village, NYSDOT, and the NYS Canal Corporation to resolve an ongoing flooding issue surrounding the Locust Street Bridge and energy plant by identifying possible alternatives to minimize flood impacts.	
Impact on Socially Vulnerable Populations:	Not applicable	
Impact on Future Development:	Future development in the vicinity of the Locust Street Bridge will have a reduction in flood risk.	
Impact on Critical Facilities/Lifelines:	This action will protect the energy plant from the flood hazard.	
Impact on Capabilities:	Not applicable	
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events. As time of heavy rainfall increase due to climate change, the area of the flood hazard may expand.	
Mitigation Category	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Priority	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium
Alternatives	<b>Action</b>	
	No action	
	Remove the bridge	
	Dredge the canal	
<b>Evaluation</b>		
Current problem continues		
May disrupt the waterflow of the canal and result in additional flooding		
Cost prohibitive		



Action 2025-WaterlooV-03. East River Street By-Pass

Lead Agency:	Village Administration		
Supporting Agencies:	NYSDEC, Facility Manager		
Hazard(s) of Concern:	<input type="checkbox"/> Dam Failure <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm	
Description of the Problem:	The sewer plant on East River Street is located on the south side of the canal. The existing by-pass allows water to channel through the sewer plant and is released into the canal. The removal of this by-pass would result in the persistent flooding on the south side of the Village, including along East River Street.		
Description of the Solution:	Initiate meetings with NYSDEC personnel to discuss the potential impacts of the removal of the by-pass system along East River Street, near the sewer plant. Conduct a study to identify methods which would eliminate or mitigate the potential additional flood risk if the by-pass were to be removed.		
Estimated Cost:	Medium		
Potential Funding Sources:	Staff Time, Village Budget		
Implementation Timeline:	Within 2 years		
Goals Met:	1, 2, 3, 4, 5		
Benefits:	This action will encourage strong communication from the Village and NYSDEC to resolve a potential flooding issue surrounding the Village's sewerage treatment plant by identifying possible alternatives which will permit the facility to maintain its current operations with minimal flood impacts.		
Impact on Socially Vulnerable Populations:	Not applicable		
Impact on Future Development:	This action will ensure future development is able to benefit from the Village's sewerage treatment plant.		
Impact on Critical Facilities/Lifelines:	This action will ensure the Village's sewerage treatment plant, a critical facility, remains operational and will not be impacted by future flood conditions from the removal of the by-pass.		
Impact on Capabilities:	This action will ensure the Village's sewerage treatment plant maintains its current capabilities.		
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events. As time of heavy rainfall increase due to climate change, the area of the flood hazard may expand.		
Mitigation Category	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category	<input checked="" type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Priority	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	<b>Action</b>		<b>Evaluation</b>
	No action		Current problem continues
	Remove the by-pass		Persistent flooding will occur along River Street in the Village
	Construct floodwalls		Will most likely interrupt natural floodplain function



Action 2025-WaterlooV-04. Flood Prone Road Mitigation Measures

Lead Agency:	Village Public Works	
Supporting Agencies:	Seneca County Highway Department	
Hazard(s) of Concern:	<input type="checkbox"/> Dam Failure <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm
Description of the Problem:	There are flood prone roadways in the Village, including Stark Street and Hecker Road by the Middle and High Schools, and Swift and E. Wright Streets near the County Fairgrounds. Sewer and drainage gates contribute greatly to the flooding of roadways in the Village.	
Description of the Solution:	As part of the Green Initiative Study taking place through the Green Innovation Grant Program (GIGP) grant, perform an assessment of the flood-prone areas of the Village. In this study, consider the construction of retention ponds, drainage expansions, and green infrastructure.	
Estimated Cost:	High	
Potential Funding Sources:	BRIC, HMGP, GIGP	
Implementation Timeline:	5 years	
Goals Met:	1, 2, 3, 4, 5	
Benefits:	This action will reduce or prevent flooding impacts felt on flood prone roadways in the Village.	
Impact on Socially Vulnerable Populations:	This action will assist socially vulnerable populations whose properties are impacted by flooding along Stark Street, Hecker Road, Swift Street, and E. Wright Street. Furthermore, this action will assist in keeping roadways clear of flood waters for the populations which may need to attend medical appointments or require medical attention from first responders.	
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.	
Impact on Critical Facilities/Lifelines:	This action will assist in the reduction of roadway flooding, permitting first responders to traverse the roadways safely.	
Impact on Capabilities:	Not applicable	
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events. This action will reduce the risk to floods by preventing or reducing roadway floods.	
Mitigation Category	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Priority	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium
Alternatives	<b>Action</b>	
	No action	
	Relocate all flood prone road system	
	Raise all flood prone roads	
<b>Evaluation</b>		
Current problem remains		
Not feasible		
Cost prohibitive		



Action 2025-WaterlooV-05. Public Safety Campus

Lead Agency:	Village Administration		
Supporting Agencies:	Facility Managers, Village Police, Village Fire, Village EMS		
Hazard(s) of Concern:	<input checked="" type="checkbox"/> Dam Failure <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm	
Description of the Problem:	There is a need for a singular Public Safety Campus, where all public safety facilities are located in one location. Currently, the structural integrity of many public safety buildings are poor, and other facilities are located in areas susceptible to flooding conditions. Furthermore, the Village does not have an Emergency Operation Center (EOC) to operate out of in times of emergency.		
Description of the Solution:	The Village shall construct a Public Safety Campus. The campus will house the Village's Police, Fire, and EMS Departments. The new campus will be designed to reduce operation and maintenance costs for all departments, improve response times, provide better communication and efficiency for all departments, provide increased community visibility and improved accessibility for residents, and provide shared, multi-purpose areas that can be used by the first responders, which maximizes the facility's use. It will prioritize green building options and efficiency measures as well. It will also be home to Village's Office of Emergency Management with upgraded technology and communication equipment in the Emergency Operations Center. The facility would also have backup power that would keep the facility running at all times and especially during natural disasters when the facility is in highest need. The complex will include the construction of a new water tank for the Village on the campus, which would also have a communications antenna on its top to strengthen the communication networks in the Village.		
Estimated Cost:	High		
Potential Funding Sources:	BRIC, HMGP, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Village Budget		
Implementation Timeline:	Within 5 years		
Goals Met:	1, 2, 3, 4, 5		
Benefits:	The new campus will be designed to reduce operation and maintenance costs for all departments, improve response times, provide better communication and efficiency for all departments, provide increased community visibility and improved accessibility for residents, and provide shared, multi-purpose areas that can be used by the first responders, which maximizes the facility's use.		
Impact on Socially Vulnerable Populations:	This facility will allow for improved response times to the populations which need it most. The facility will also strengthen emergency communication networks to ensure talk-around is permitted at distances.		
Impact on Future Development:	This facility will allow for improved response times to current and future development.		
Impact on Critical Facilities/Lifelines:	Police, Fire, and EMS facilities are considered critical. This new facility, which will house all three departments, will strengthen the Safety and Security lifeline.		
Impact on Capabilities:	This facility would strengthen the Village's first response capabilities by providing a new, structurally sound, multi-functioning public safety complex, which can operate safely during time of an emergency.		
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related disaster events. This action will create a singular location for all emergency response personnel which will assist in preparedness, response, and recovery operations.		
Mitigation Category	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)	
Priority	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	<b>Action</b>		<b>Evaluation</b>
	No Action		Current problems continue



	Renovate existing facilities	Both facilities would need to be renovated which is more than creating a better new one
	Relocate facilities	Most feasible option



Action 2025-WaterlooV-06. Socially Vulnerable Populations Outreach

Lead Agency:	Village Administration	
Supporting Agencies:	Seneca County	
Hazard(s) of Concern:	<input checked="" type="checkbox"/> Dam Failure <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm
Description of the Problem:	<p>The Village does not have any organizations that conduct outreach to socially vulnerable populations and underserved populations relating to the identified hazards of concern. Identifying, communicating, and educating vulnerable populations can increase the resiliency of the Village through the reduction of long-risk risks associated with each hazard of concern. Furthermore, emergency responders will be able to prioritize assistance, when feasible, in an emergency to help those who need it most.</p>	
Description of the Solution:	<p>Create outreach materials, or utilize those from Seneca County, on hazard risks and methods of mitigation measures for socially vulnerable populations, including dam failure, drought, earthquake, extreme temperature, flood, landslide, severe storm, and severe winter storm. Methods of distribution may include Village events, the Village newsletters, social media, the Village website, and having the materials on display for the public at Village libraries and offices. Consider hiring staff to work directly with socially vulnerable populations. Outreach materials will be specified with education and information for each individual hazard of concern, with measures identified which can assist in reducing long-term risk to the identified hazards of concern.</p>	
Estimated Cost:	Low	
Potential Funding Sources:	Village Budget, HMGP	
Implementation Timeline:	Within 3 years	
Goals Met:	1, 2, 3, 4, 5, 6	
Benefits:	<p>This action will ensure there is an individual working to identify and work with the socially vulnerable populations in the Village. Furthermore, this action will create opportunities to educate and inform populations on hazard risks.</p>	
Impact on Socially Vulnerable Populations:	<p>Socially vulnerable populations in the Village will become educated on hazards risks. The Village will identify an individual to identify and work with these populations to ensure the most up to date information is being shared.</p>	
Impact on Future Development:	Not applicable	
Impact on Critical Facilities/Lifelines:	<p>Educating populations on hazard risk and how to mitigate the risks can decrease the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.</p>	
Impact on Capabilities:	<p>This action would build upon the Village's already existing public education and outreach program.</p>	
Climate Change Considerations:	<p>Climate change is likely to increase the intensity and frequency of many climate related disaster events. This action will inform residents and business owners of how to reduce risk from hazards and how climate change may exacerbate those risks.</p>	
Mitigation Category	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Priority	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium
Alternatives	<b>Action</b>	
	No action	
	Rely on state or federal resources	
	Use only a few methods for distribution	
	<b>Evaluation</b>	
	Current methods remain the only ones used	
	Resources may be generalized and not specific to the risks in the Village	
	Using only a few methods of distribution may hinder socially vulnerable populations from receiving the guidance	



Action 2025-WaterlooV-07. Public Education and Outreach

Lead Agency:	Village Administration	
Supporting Agencies:	Seneca County	
Hazard(s) of Concern:	<input checked="" type="checkbox"/> Dam Failure <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm
Description of the Problem:	<p>The Village currently does not have a comprehensive education and outreach program. There is a need to educate residents and businesses about storm mitigation, preparation, response, and recovery. Additionally, the Village has a need to further explain flood insurance to community members. Identifying, communicating, and educating residents and visitors can increase the resiliency of the Village through the reduction of long-risk risks associated with each hazard of concern.</p>	
Description of the Solution:	<p>Develop and enhance the public awareness program on hazards, prevention, insurance and mitigation. Continue to work with Seneca County on their program that provides information to the municipalities. Create outreach materials, or utilize those from Seneca County, on hazard risks and methods of mitigation measures for residents and visitors, including dam failure, drought, earthquake, extreme temperature, flood, landslide, severe storm, and severe winter storm. Methods of distribution may include Village events, the Village newsletters, social media, the Village website, and having the materials on display for the public at Village libraries and offices. Outreach materials will be specified with education and information for each individual hazard of concern, with measures identified which can assist in reducing long-term risk to the identified hazards of concern.</p>	
Estimated Cost:	Low	
Potential Funding Sources:	Village Budget	
Implementation Timeline:	1 year	
Goals Met:	1, 2, 3, 4, 5	
Benefits:	<p>This action will improve the current public education and outreach program in the Village by including discussions on disaster preparedness and hazard mitigation to residents and business owners, which will contribute to the resiliency of the Village.</p>	
Impact on Socially Vulnerable Populations:	<p>Socially vulnerable populations will learn how to prepare for and mitigate the various hazards which may impact them in the Village.</p>	
Impact on Future Development:	Not applicable	
Impact on Critical Facilities/Lifelines:	<p>Businesses, which may be considered critical facilities or lifelines, would be more informed on how to prepare for emergency events and mitigate the risks of potential hazards. With these businesses becoming more resilient, this action would contribute to their continuity of operations.</p>	
Impact on Capabilities:	<p>This action would build upon the County's already existing public education and outreach program and adapt it to the Village's needs.</p>	
Climate Change Considerations:	<p>Climate change is likely to increase the intensity and frequency of many climate related disaster events. This action will inform residents and business owners of how to reduce risk from hazards and how climate change may exacerbate those risks.</p>	
Mitigation Category	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Priority	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium
Alternatives	<b>Action</b>	
	No action	
	Rely on state or federal resources	<b>Evaluation</b> Current methods remain the only ones used  Resources may be generalized and not specific to the risks in the Village



Use only a few methods for distribution

Using only a few methods of distribution may hinder socially vulnerable populations from receiving the guidance



Action 2025-WaterlooV-08. Repetitive and Severe Repetitive Loss Properties

Lead Agency:	Floodplain Administrator		
Supporting Agencies:	Seneca County		
Hazard(s) of Concern:	<input type="checkbox"/> Dam Failure <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm	
Description of the Problem:	There are repetitive loss properties in the Village. Repetitively flooded properties place an undue stress on the property owner and Village and efforts should be made to mitigate them.		
Description of the Solution:	The Village will promote and support non-structural flood hazard mitigation alternatives for at risk properties within the floodplain, including those that have been identified as Repetitive Loss (RL) and Severe Repetitive Loss (SRL), such as acquisition/relocation or elevation depending on feasibility. The parameters for this initiative would be funding, benefits versus cost, and willing participation of property owners. The Village is currently working with FEMA's Natural Resources Conservation Services and the District Soil and Water to begin this initiative.		
Estimated Cost:	Medium		
Potential Funding Sources:	FMA, FMA SWIFT, Village Budget, County Budget, Property Owners		
Implementation Timeline:	3 years		
Goals Met:	1, 2, 3, 4, 5		
Benefits:	This action would foster comprehensive floodplain management by removing at risk properties from the flood hazard area or elevating properties to reduce the flood risk.		
Impact on Socially Vulnerable Populations:	Socially vulnerable populations may be able to have houses elevated or acquired when it would otherwise be unaffordable.		
Impact on Future Development:	Increased outreach to homeowners within a flood prone area will limit construction in areas that are prone to hazard events. Homes may be acquired, which will remove those structures from the floodplain and prevent future development on those sites.		
Impact on Critical Facilities/Lifelines:	Removing structures from the floodplain decreases the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.		
Impact on Capabilities:	This action will enhance the Village's current NFIP capabilities.		
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events.		
Mitigation Category	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Priority	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	<b>Action</b>		<b>Evaluation</b>
	No action		Current problem continues
	Construct flood walls/barriers around vulnerable areas		Costly and can divert floodwaters to other areas
	Deployable flood barriers for vulnerable areas		Requires a great deal of work to implement prior to each event



Action 2025-WaterlooV-09. Flood Mitigation Interest

Lead Agency:	Floodplain Administrator	
Supporting Agencies:	Planning Board, Zoning Board, Village Administration	
Hazard(s) of Concern:	<input type="checkbox"/> Dam Failure <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm
Description of the Problem:	The Village does not have a formalized list of damaged properties or property owners which may be interested in flood mitigation measures, such as elevation or acquisition. The development of this capability can provide a potential list of properties which may be eligible for flood mitigation measures, including acquisition, elevation, or relocation.	
Description of the Solution:	The Floodplain Administration will develop a list for inventorying system or properties damaged by flood events and property owners who are interested in flood mitigation measures, such as acquisition, elevation, or relocation.	
Estimated Cost:	Staff time, Low	
Potential Funding Sources:	Village Budget	
Implementation Timeline:	Within 2 years	
Goals Met:	1, 2, 3, 4, 5	
Benefits:	Keeping a list of damaged properties and property owners interested in flood mitigation efforts may lead to the elimination of flood damage to homes and residences, which creating an open space for the municipality and increasing flood storage.	
Impact on Socially Vulnerable Populations:	Collecting data regarding homeowners that reside within flood prone areas provides an opportunity to introduce location-specific opportunities for assistance. Removing homes from the floodplain immediately removes the risk to life and property.	
Impact on Future Development:	Increased outreach to homeowners within a flood prone area will limit construction in areas that are prone to hazard events. Homes may be acquired, which will remove those structures from the floodplain and prevent future development on those sites.	
Impact on Critical Facilities/Lifelines:	Removing structures from the floodplain decreases the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.	
Impact on Capabilities:	This action will create a new Village capability, while enhancing its current NFIP capabilities.	
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events. Areas experiencing flooding conditions may increase. Removing structures from the floodplain will reduce the response and recovery costs as a result of these events and decrease the loss of human life as a result of these events. Elevating structures will reduce the recovery costs as a result of these events.	
Mitigation Category	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Priority	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives	<b>Action</b>	<b>Evaluation</b>
	No action	Current problem remains
	Only share opportunities when notified of grant funding	May not be enough time to garner interest or write application
	Wait for information from the State on flood-damaged properties	May be a delay in notice



Action 2025-WaterlooV-10. Substantial Damage Management Plan

Lead Agency:	Planning Board		
Supporting Agencies:	Seneca County Code Enforcement		
Hazard(s) of Concern:	<input type="checkbox"/> Dam Failure <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm	
Description of the Problem:	<p>Officials in NFIP-participating communities are responsible for regulating all development in SFHAs by issuing permits and enforcing local floodplain requirements, including Substantial Damage, for the repairs of damaged buildings. After any disaster event including dam failure, earthquake, flood, landslide, severe storm, and severe storm, they must:</p> <ul style="list-style-type: none"> <li>Determine where the damage occurred within the community and if the damaged structures are in an SFHA.</li> <li>Determine what to use for “market value” and cost to repair; uniformly applying regulations will protect against liability and promote equitable administration.</li> <li>Determine if repairing plus improving the damaged structure equals or exceeds 50% of the structure’s pre-damage value.</li> <li>Require permits for floodplain development.</li> </ul> <p>The County issues the municipality’s building permits. The municipality does not have a Substantial Damage Management Plan in place, nor do they have a formal process in place when conducting substantial damage determinations. The municipality is in need of a formal process and plan to provide a framework for conducting such inspections and determinations.</p>		
Description of the Solution:	<p>The municipality will work with the County to develop a Substantial Damage Management Plan, following the six-step planning process in 2021 Developing a Substantial Damage Management Plan (<a href="https://crsresources.org/files/500/developing_subst_damage_mgmt_plan.pdf">https://crsresources.org/files/500/developing_subst_damage_mgmt_plan.pdf</a>). This plan will outline responsibilities for Substantial Damage determinations, determining market value, and permit approval processes following a disaster event.</p>		
Estimated Cost:	Staff Time		
Potential Funding Sources:	Town Budget, County Budget		
Implementation Timeline:	Within 5 years to develop the plan; ongoing to maintain and update the plan		
Goals Met:	1, 3, 4, 5		
Benefits:	This plan will provide a process in making Substantial Damage Determinations and allow the municipality to make these determinations and meet NFIP requirements more quickly.		
Impact on Socially Vulnerable Populations:	Substantially damaged structures are required to be rebuilt to be compliance with current codes. Socially vulnerable populations may not have the financial means to make these improvements. This action may allow for the identification of potential resources to address substantial damages to structures owned by socially vulnerable populations.		
Impact on Future Development:	A Substantial Damage Management Plan would include all existing, current, and future development in the municipality.		
Impact on Critical Facilities/Lifelines:	A Substantial Damage Management Plan would include all critical facilities and lifelines in the municipality.		
Impact on Capabilities:	This action improves disaster recovery capabilities.		
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related disaster events. This action provides additional planning for disaster recovery.		
Mitigation Category	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)	
Priority	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	<b>Action</b>		<b>Evaluation</b>
	No action		Current problem continues



	Rely on state or federal resources following disaster events	Resources may not be available during major widespread events
	Establish MOUs with outside agencies to conduct Substantial Damage Determinations	A plan outlining responsibility is still necessary to prevent missing important requirements



Action 2025-WaterlooV-11. Community Rating System (CRS) Program

Lead Agency:	Floodplain Administrator		
Supporting Agencies:	Village Administrator		
Hazard(s) of Concern:	<input type="checkbox"/> Dam Failure <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm	
Description of the Problem:	The Village is not currently in the CRS program despite having flood risk exposure. The Village needs to identify whether joining the program will be beneficial to the community and its residents.		
Description of the Solution:	The Village will evaluate the benefits and costs of participating in CRS program. If feasible, the Village will join the program and begin implementing standards that exceed NFIP requirements.		
Estimated Cost:	Low		
Potential Funding Sources:	Village Budget		
Implementation Timeline:	2 years		
Goals Met:	1, 2, 3, 4, 5		
Benefits:	The participation in the CRS benefits communities by offering discounted rates for flood insurance premiums, which addresses the three goals of the program: reduce and avoid flood damage to insurable property, strengthen and support the insurance aspects of the National Flood Insurance Program, and foster comprehensive floodplain management.		
Impact on Socially Vulnerable Populations:	The participation in the Community Rating System (CRS) benefits communities by offering discounted rates for flood insurance premiums, which may be more affordable for some socially vulnerable populations.		
Impact on Future Development:	Future development would need to adhere to any increased standards established as part of joining the CRS program such as increased freeboard and elevation certificate requirements.		
Impact on Critical Facilities/Lifelines:	Not applicable		
Impact on Capabilities:	This action would enhance the Village's floodplain management capabilities.		
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events. These changes are likely to increase flood risks.		
Mitigation Category	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Priority	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	<b>Action</b>		<b>Evaluation</b>
	No action		-
	Adopt aspects of the CRS program into the floodplain management program		Increased floodplain management capabilities but no reduction in flood insurance premiums
	Abandon any floodplain management practices not required by NFIP		Reduction in floodplain management capabilities and increase in risk.



Action 2025- WaterlooV-12. Critical Facilities in the Floodplain

Lead Agency:	Planning Board	
Supporting Agencies:	Facility Managers	
Hazard(s) of Concern:	<input type="checkbox"/> Dam Failure <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm
Description of the Problem:	<p>Critical facilities located in the floodplain are not only susceptible to flood damage but also create unnecessary complications for the municipality during an emergency event and post-disaster recovery. The following critical facilities are located in the special flood hazard area:</p> <ul style="list-style-type: none"> <li>• Highway Bridge - 1035070</li> <li>• Highway Bridge - 1035080</li> <li>• Highway Bridge - 4435100</li> <li>• Highway Bridge - 4435140</li> <li>• Railroad Bridge - W1109_NY81658</li> <li>• Waterloo Dam</li> <li>• WATERLOO HYDROELECTRIC PROJECT</li> </ul>	
Description of the Solution:	<p>The Village will conduct a feasibility assessment to determine what additional floodproofing measures are needed at the critical facilities to protect each to the 500-year flood level. Options include:</p> <ul style="list-style-type: none"> <li>• Elevation of facility</li> <li>• Floodproofing of facility</li> <li>• Mobile flood barriers</li> <li>• Bridge feasibility study</li> <li>• Replacement or retrofit of bridges</li> </ul> <p>Once the most cost-effective option is identified, the Village will carry out the option.</p>	
Estimated Cost:	TBD based on floodproofing measure	
Potential Funding Sources:	FEMA HMGP and PDM, BRIC, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Village Budget	
Implementation Timeline:	Within 5 Years	
Goals Met:	1, 4, 5, 6	
Benefits:	Ensures continuity of operations of the critical facilities.	
Impact on Socially Vulnerable Populations:	Protection of critical facilities provides an opportunity for first responders and emergency managers to maintain critical services that socially vulnerable populations rely on.	
Impact on Future Development:	The risk of significant damage occurring to the structure will be reduced, which will allow critical operations to be maintained or only briefly interrupted in severe events. This provides continued support to both current and future development in the service area.	
Impact on Critical Facilities/Lifelines:	This action will protect the dam and bridges which are critical facilities, maintaining the critical services that it provides.	
Impact on Capabilities:	This action improves continuity of operations during a flood event, allows for a more rapid return to pre-disaster capabilities after a flood event, and faster deployment of post disaster capabilities.	
Climate Change Considerations:	This action addresses anticipated increases in flooding frequency and severity through protection to the 500-year (0.2-percent annual chance) flood level.	
Mitigation Category	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)
Priority	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium
		<input type="checkbox"/> Low
	<b>Action</b>	<b>Evaluation</b>



Alternatives	No action	Current problem continues
	Relocate facility	Relocation is expensive and results in loss or delay of critical services in the immediate area
	Establish plans to enter into MOU with neighboring critical facilities to provide service during flood events	Reduction in response times and delay of critical services in the immediate area.



Action 2025-WaterlooV-13. Waterloo Dam Rehab

Lead Agency:	C-S Canals LLC		
Supporting Agencies:	New York State Canal Corporation, County Engineer, County EMO, NYSDEC, Municipal Engineer		
Hazard(s) of Concern:	<input checked="" type="checkbox"/> Dam Failure <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm	
Description of the Problem:	Waterloo Dam is a Class I High Hazard Dam that is located on the Seneca River where it meets the Seneca Canal. The dam is owned by the New York State Canal Corporation and leased to C-S Canals LLC. Failure of the dam could result in inundation of densely populated areas, critical facilities and community lifelines, State Route 96, and local roadways including Locust Street, Huff Street, and Fayette Street. Although the dam was last inspected in 2011, the risk of dam failure warrants an engineering evaluation to determine if retrofits of the dam would result in safer conditions. C-S Canals LLC notes its regular inspections and maintenance have not revealed any outstanding, needed repairs or improvements.		
Description of the Solution:	The Municipal Engineer will work with the New York State Canal Corporation and C-S Canals LLC to complete an engineering study of Waterloo Dam. The Village will also request information and input from its Public Works department and the County regarding impacted roadways. If cost-effective mitigation measures or retrofit options are identified that can increase the level of safety and length of useful life, the Village and the New York State Canal Corporation will pursue funding support, permit approval from NYSDEC, and implement the cost-effective measures.		
Estimated Cost:	High		
Potential Funding Sources:	FEMA BRIC, HHPD		
Implementation Timeline:	Within 5 years		
Goals Met:	1, 2, 7		
Benefits:	This action will improve the safety and security of those who live within the dam inundation areas of the dams and increase the resilience of responding agencies.		
Impact on Socially Vulnerable Populations:	The action will result in better preparedness within the Special Flood Hazard Area and inundation areas where significant risk to socially vulnerable populations exists.		
Impact on Future Development:	Future development located in or near the dam inundation area will be further protected from a dam failure event.		
Impact on Critical Facilities/Lifelines:	Dams are considered a critical facility. This action will create an understanding of the safety procedures in place for each identified dam and strengthen the structural integrity of dam, as needed.		
Impact on Capabilities:	This action will improve planning and response capabilities through the understanding of responsibilities and procedures.		
Climate Change Considerations:	Climate change may result in an increase in the frequency and severity of weather-related disaster events, which may contribute to the likelihood of a dam failure event due to projected increases in precipitation. This action will increase the capabilities to respond to these events.		
Mitigation Category	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Priority	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	<b>Action</b>		<b>Evaluation</b>
	No Action		Current problem continues
	Decommission Dam		High cost, flood risk for nearby infrastructure increased, loss of the Seneca River and Canal as an environmental, navigational, and hydroelectric resource.



	Elevate nearby structures	Very high cost and likely not feasible for commercial properties. Will not reduce potential for dam failure due to poor dam conditions
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