



# TIOGA COUNTY HAZARD MITIGATION PLAN UPDATE

## VOLUME II

## FINAL

## DECEMBER 2018

*UPDATED FOR NYS DHSES AND FEMA  
REVIEW—FEBRUARY 2019*



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## SECTION 8. PLANNING PARTNERSHIP

This section provides a description of the Tioga County’s HMP update planning partnership, their responsibilities throughout the planning process and the jurisdictional annexes developed as a result of their plan update efforts.

### 8.1 BACKGROUND

Section 201.6.a(4) of Chapter 44 of the Code of Federal Regulations (44CFR) states: “Multi-jurisdictional plans (e.g. watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process and has officially adopted the plan.” FEMA and NYS DHSES both encourage multi-jurisdictional planning. Therefore, in the preparation of the Tioga County HMP update, a planning partnership was formed meet requirements of the federal Disaster Mitigation Act of 2000 (DMA) for as many eligible local governments in Tioga County as possible.

The DMA defines a local government as “Any county, municipality, city, town, township, public authority, school district, special district, intrastate district, council of governments (regardless of whether the council of governments is incorporated as a nonprofit corporation under State law), regional or interstate government entity, or agency or instrumentality of a local government; any Indian tribe or authorized tribal organization, or Alaska Native village or organization; and any rural community, unincorporated town or village, or other public entity.”

#### 8.1.1 Initial Solicitation and Letters of Intent

Tioga County solicited the participation of all municipalities in the County at the commencement of this project. All municipalities interested signed a “Letter of Intent” and/or a resolution committing their participation and resources to the development of the Tioga County HMP update (Appendix B). Table 8-1 lists the jurisdictions that elected to participate in the update process, and have met the minimum requirements of participation as established by the County and Steering Committee. Tioga County and all its municipalities participated in the HMP update.

**Table 8-1. Participating Jurisdictions in Tioga County**

Jurisdictions	
Tioga County	
Barton (Town)	Owego (Town)
Berkshire (Town)	Owego (Village)
Candor (Town)	Richford (Town)
Candor (Village)	Spencer (Town)
Newark Valley (Town)	Spencer (Village)
Newark Valley (Village)	Tioga (Town)
Nichols (Town)	Waverly (Village)
Nichols (Village)	



### 8.1.2 Planning Partner Responsibilities

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The Planning Committee agreed to the following list of expectations:

- Review 2013 HMP goals and re-establish HMP update goals and objectives;
- Establish a timeline for completion of the HMP update;
- Ensure the HMP update meets the requirements of the DMA 2000, and FEMA and NYS DHSES guidance;
- Solicit and encourage the participation of regional agencies, a range of stakeholders, and citizens in the HMP development process;
- Assist in gathering information for inclusion in the HMP, including the use of previously developed reports and data;
- Organize and oversee the public involvement process and support outreach efforts in the community;
- Develop, revise, adopt, and maintain Volume I of the HMP update in its entirety and the local jurisdictional annex in Volume II.

As described in Section 7 (Plan Maintenance) it is intended that the planning partnership remain active beyond the regulatory update to support plan maintenance. Regarding the composition of the Steering and Planning Committees, it is recognized that individual commitments change over time, and it shall be the responsibility of each jurisdiction and its representatives to inform the HMP Coordinator of any changes in representation.

### 8.1.3 Jurisdictional Annexes

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New to the Tioga County HMP update is a two-volume approach, including the development of a jurisdictional annex for each participating jurisdiction. While the local annex format is designed to document and assure local compliance with the DMA 2000 regulations, its greater purpose and function includes:

- Providing a locally-relevant synthesis of the overall mitigation plan that can be readily presented, distributed, and maintained;
- Facilitating local understanding of the community's risk to natural hazards;
- Facilitating local understanding of the community's capabilities to manage natural hazard risk, including opportunities to improve those capabilities;
- Facilitating local understanding of the efforts the community has taken, and plans to take, to reduce their natural hazard risk;
- Facilitating the implementation of mitigation strategies, including the development of grant applications;
- Providing a framework by which the community can continue to capture relevant data and information for future plan updates.

It is recognized that each jurisdiction's annex is a "living" document, and will continue to be improved as resources permit. As such, its design is intended to promote and accommodate continued efforts to maintain the annex to be current and to improve the effectiveness of the annex as the key tool, reference and guiding document by which the jurisdiction will implement hazard mitigation locally.

The following provides a description of the various elements of the jurisdictional annex.

**Section 9.X.1: Hazard Mitigation Plan Point of Contact:** Identifies the hazard mitigation planning primary and alternate(s) contacts, as identified by the jurisdiction.



**Section 9.X.2: Municipal Profile:** Provides an overview and profile of the jurisdiction, including an identification of areas of known and anticipated future development and the vulnerability of those areas to the hazards of concern.

**Section 9.X.3: Natural Hazard Event History Specific to the Municipality:** Identifies hazard events that have caused significant impacts within the jurisdiction, including a summary characterization of those impacts as identified by the jurisdiction. The documentation of events and losses is critical to supporting the identification and justification of appropriate mitigation actions, including providing critical data for benefit-cost analysis. It is recognized that this “inventory” of events and losses is a work-in-progress, and may continue to be improved as resources permit. As such, the lack of data or information for a specific event does not necessarily mean that the jurisdiction did not suffer significant losses during that event.

**Section 9.X.4: Hazard Vulnerabilities and Ranking:** This subsection provides information regarding each plan participant’s vulnerability to the identified hazards. Full data and information on the hazards of concern, the methodology used to develop the vulnerability assessments, and the results of those assessments that serve as the basis of these local risk rankings may be found in Section 5.

- **Hazard Risk Ranking:** The Tioga County HMP update identifies and characterizes the broad range of hazards that pose risk to the entire planning area; however each jurisdiction has differing degrees of risk exposure and vulnerability aside from the whole. The local risk ranking serves to identify each jurisdiction’s degree of risk to each hazard as it pertains to them, supporting the appropriate selection and prioritization of initiatives that will reduce the highest levels of risk for each community.
- **National Flood Insurance Program (NFIP) Summary:** Provides NFIP summary statistics for the jurisdiction.
- **Critical Facilities Flood Risk:** Identifies potential flood losses to critical facilities in the jurisdiction, based on the flood vulnerability assessment process presented in Section 5.
- **Identified Issues:** Presents other specific hazard vulnerabilities as identified by the jurisdiction.

**Section 9.X.5: Capability Assessment:** This subsection provides an inventory and evaluation of the jurisdiction’s tools, mechanisms and resources available to support hazard mitigation and natural hazard risk reduction. Within the municipal annexes, tables provide an inventory of the municipality’s planning and regulatory, administrative and technical, and fiscal, capabilities, respectively. Further, another table identifies the municipality’s level of participation in state and federal programs designed to promote and incentivize local risk reduction efforts.

- **National Flood Insurance Program (NFIP):** This subsection documents the NFIP as implemented within the jurisdiction. This summary was based on surveys prepared by, and/or interviews conducted with, the NFIP Floodplain Administrators for each NFIP-participating community in the County. This subsection also identifies actions to enhance implementation and enforcement of the NFIP within the community.
- **Integration of Hazard Mitigation into Existing Planning Mechanisms:** This subsection identifies how the jurisdiction has integrated hazard risk management into their existing planning, regulatory and operational/administrative framework (“integration capabilities”), and/or how they intend to promote this integration (“integration actions”). Further information regarding Federal, State and local capabilities may be found in the Capability Assessment portion of Section 6.

**Section 9.X.6: Mitigation Strategy and Prioritization:** This section discusses and provides the status of past mitigations actions and status, describes proposed hazard mitigation initiatives, and prioritization.





**Past Mitigation Initiative Status:** Where applicable, a review of progress on the jurisdiction's prior mitigation strategy is presented, identifying the disposition of each prior action, project or initiative in the jurisdiction's updated mitigation strategy. Other completed or on-going mitigation activities that were not specifically part of a prior local mitigation strategy may be included in this sub-section as well.

**Proposed Mitigation Strategy:** Table 9.X-11 presents the jurisdiction's updated mitigation strategy. As indicated, applicable mitigation actions, projects and initiatives are further documented on an Action Worksheet which provides details on the project identification, evaluation, prioritization and implementation process. Table 9.X-12 provides a summary of the local mitigation strategy prioritization process discussed in Section 6.

**Section 9.X.7: Future Needs to Better Understand Risk/Vulnerability:** During the development of each annex, each jurisdiction identified if there are any anticipated needs in order to better understand risk and vulnerability going forward. If a jurisdiction identified such needs, they are captured in this section.

**Section 9.X.8: Hazard Area Extent and Location Map:** Each annex includes a map (or series of maps) illustrating identified hazard zones, critical facilities, and areas of NFIP Repetitive Loss/Severe Repetitive Loss (RL/SRL). Further, these maps show areas of known or anticipated future development, as available and provided by the jurisdiction.

**Action Worksheets:** Following NYS DHSES HMP Standards Guide, each municipality development a minimum of two action worksheets. These worksheets provide each municipality with a more developed starting point for project implementation should funding become available.

Workshops and additional meetings (via in person, email and/or teleconference) to complete the jurisdictional annexes were held with the Steering and Planning Committees throughout the planning process. In summary, all participating communities and the County completed the planning partner expectations and annex-preparation process. Details regarding these meetings are described further in Sections 3 (Planning Process) and 6 (Mitigation Strategy). Completed jurisdictional annexes are presented in Section 9.

## 9.1 TIOGA COUNTY

This section presents the jurisdictional annex for the County of Tioga.

### 9.1.1 Hazard Mitigation Plan Point of Contact

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

Primary Point of Contact	Alternate Point of Contact
Mike Simmons, Emergency Services Director 103 Corporate Drive, Owego, NY 13827 607-687-2083 <a href="mailto:simmons@co.tioga.ny.us">simmons@co.tioga.ny.us</a>	Elaine Jardine, County Planning Director 56 Main Street, Owego, NY 13827 607-687-8257 <a href="mailto:jardinee@co.tioga.ny.us">jardinee@co.tioga.ny.us</a>

### 9.1.2 Municipal Profile

Section 4 (County Profile), Volume I of this HMP includes details on Tioga County's population, location, climate, history, growth, and development.

### 9.1.3 Natural Hazard Event History Specific to the Municipality

Tioga County has a history of natural hazard events, as detailed in Volume I, Section 5.0 (Risk Assessment) of this HMP. A summary of historical events appears in each hazard profile of the plan and includes a chronology of events that have affected the County and its municipalities.

### 9.1.4 Hazard Vulnerabilities and Ranking

The hazard profiles in Section 5.0 (Risk Assessment) of this HMP convey detailed information regarding each participating jurisdiction's vulnerability to the identified hazards. The risk ranking methodology is presented in Section 5.3 (Risk Ranking). The County had the opportunity to adjust the final ranking based on feedback from planning partners. The following summarizes the hazard vulnerabilities and their ranking in Tioga County. Section 5.0 (Risk Assessment) includes additional vulnerability information relevant to this jurisdiction.

#### Natural Hazard Risk/Vulnerability Risk Ranking

The table below summarizes the hazard risk/vulnerability rankings of potential natural hazards for Tioga County. The County has reviewed the hazard risk/vulnerability risk ranking table and has made adjustments as necessary. Both Severe Storm and Severe Winter Weather rankings were adjusted from high to medium. The County indicated that they have the capabilities to withstand impacts from both types of hazard events.

**Table 9.1-1. Hazard Risk/Vulnerability Risk Ranking**

Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard <sup>a, b, c</sup>		Probability of Occurrence	Hazard Ranking
Drought	Damage estimate not available		Frequent	Medium
Flood	RCV Exposed to 1% Annual Chance Flood Event	\$1,118,675,000	Frequent	Medium
Severe Storm	\$0	\$0	Frequent	Medium*
	\$391,135	\$391,135		
Severe Winter Weather	1% GBS	\$47,645,360	Frequent	Medium*
	5% GBS	\$238,226,800		

**Notes:**

- a. Building damage ratio estimates based on FEMA 386-2 (August 2001)
- b. Loss estimates for the severe storm and severe winter storm hazards are structural values only and do not include the value of contents.
- c. Loss estimates for the flood hazard represents both structure and contents.

## 9.1.5 Capability Assessment

This section identifies the following capabilities of the local jurisdiction:

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

### Planning and Regulatory Capability

The table below summarizes the regulatory tools that are available to the County of Tioga.

**Table 9.1-2. Planning and Regulatory Tools**

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
<b>Planning Capability</b>				
Master / Comprehensive Plan	No	-	-	-
Capital Improvements Plan	Yes	County	DPW	Capital Improvements Plan
Floodplain Management / Basin Plan	No	-	-	-
Stormwater Management Plan	Yes	County	DPW	2020 Stormwater Management Plan
Open Space Plan	No	-	-	-
Stream Corridor Management Plan	No	-	-	-
Watershed Management or Protection Plan	No	-	-	-
Economic Development Plan	Yes	County	EDP	Tioga County 2020 Strategic Plan (July 2016)
Comprehensive Emergency Management Plan	Yes	County	Emergency Services	Tioga County Comprehensive Emergency Management Plan (2013)
Emergency Operation Plan	Yes	County	Emergency Services	Emergency Operations Plan
Post-Disaster Recovery Plan	Yes	County	DPW	Post -Disaster Recovery Plan
Transportation Plan	No	-	-	-
Strategic Recovery Planning Report	No	-	-	-
Other Plans:	Yes	County	EDP	Tioga County Infrastructure Master Plan (2004)

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
				Tioga County Agriculture & Farmland Protection Plan (1998 & 2015)
<b>Regulatory Capability</b>				
Building Code	Yes	State & Local		For county construction projects
Zoning Ordinance	No	Local	Municipal Departments	Regulated at local level
Subdivision Ordinance	No	Local	Municipal Departments	Regulated at local level
NFIP Flood Damage Prevention Ordinance	No	Local	Municipal Departments	Regulated at local level
NFIP: Cumulative Substantial Damages	No	Local	Municipal Departments	Regulated at local level
NFIP: Freeboard	No	Local	Municipal Departments	Regulated at local level
Growth Management Ordinances	No	-	-	-
Site Plan Review Requirements	No	Local	Municipal Departments	Regulated at local level
Stormwater Management Ordinance	No	Local	Municipal Departments	Regulated at local level
Municipal Separate Storm Sewer System (MS4)	Yes	Federal, State, Local	DPW	Broome-Tioga Stormwater Coalition
Natural Hazard Ordinance	No	-	-	-
Post-Disaster Recovery Ordinance	No	-	-	-
Real Estate Disclosure Requirement	Yes	State		NYS mandate, Property Condition Disclosure Act, NY Code - Article 14 §460-467
Other (Special Purpose Ordinances [i.e., sensitive areas, steep slope])	No	-	-	-

### Administrative and Technical Capability

The table below summarizes potential staff and personnel resources available to the County of Tioga.

**Table 9.1-3. Administrative and Technical Capabilities**

Resources	Is this in place? (Yes or No)	Department/ Agency/Position
<b>Administrative Capability</b>		
Planning Board	Yes	EDP / County Planning Director
Mitigation Planning Committee	Yes	CPD, Planning Dept., EDP, SWCD
Environmental Board/Commission	No	-
Open Space Board/Committee	No	-

Resources	Is this in place? (Yes or No)	Department/ Agency/Position
Economic Development Commission/Committee	Yes	EDP / IDA and LDC
Maintenance Programs to Reduce Risk	Yes	Bridge painting, facilities improvements
Mutual Aid Agreements	Yes	Emergency Services
<b>Technical/Staffing Capability</b>		
Planner(s) or engineer(s) with knowledge of land development and land management practices	Yes	County Planning Director
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	Yes	Environmental Health staff
Planners or engineers with an understanding of natural hazards	Yes	County Planning Director, SWCD
NFIP Floodplain Administrator (FPA)	No	Municipal level
Surveyor(s)	No	-
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	Yes	ITCS / GIS
Scientist familiar with natural hazards	Yes	SWCD
Emergency Manager	Yes	Emergency Services
Grant writer(s)	Yes	Various
Staff with expertise or training in benefit/cost analysis	No	-
Professionals trained in conducting damage assessments	Yes	County Code Enforcement Officer

### Fiscal Capability

The table below summarizes financial resources available to the County of Tioga.

**Table 9.1-4. Fiscal Capabilities**

Financial Resources	Accessible or Eligible to Use (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	Eligible but not experienced
Capital improvements project funding	Yes - DPW
Authority to levy taxes for specific purposes	Yes
User fees for water, sewer, gas or electric service	No
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	Yes
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	No
Other federal or state Funding Programs	No
Open Space Acquisition funding programs	No
Other	Eligible but not experienced

### Community Classifications

The table below summarizes classifications for community program available to the County of Tioga.



**Table 9.1-5. Community Classifications**

Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	N/A	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	N/A	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	N/A	-	-
NYSDEC Climate Smart Community	No	-	-
Storm Ready Certification	Yes	N/A	N/A
Firewise Communities classification	N/A	-	-
Natural disaster/safety programs in/for schools	No	-	-
Organizations with mitigation focus (advocacy group, non-government)	Yes	N/A	N/A
Public education program/outreach (through website, social media)	Yes	N/A	N/A
Public-private partnership initiatives addressing disaster-related issues	No	-	-

Note:

N/A      Not applicable  
 NP      Not participating  
 -      Unavailable

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

Criteria for classification credits are outlined in the following documents:

- The Community Rating System Coordinators Manual
- The Building Code Effectiveness Grading Schedule website at <https://www.isomitigation.com/bcegs/>
- The ISO Mitigation online ISO's Public Protection website at <https://www.isomitigation.com/ppc/>
- The National Weather Service Storm Ready website at <https://www.weather.gov/stormready/>
- The National Firewise Communities website at <https://www.nfpa.org/Public-Education/By-topic/Wildfire/Firewise-USA>

### Self-Assessment of Capability

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

**Table 9.1-6. Self-Assessment Capability for the Municipality**

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

### National Flood Insurance Program

It is the intention of the County to incorporate hazard mitigation planning and natural hazard risk reduction as an integral component of the County’s administrative, regulatory and operational framework. Such efforts which are now an ongoing part of County operations are now identified in the Capability Assessment of Section 6 – Mitigation Strategy, as well as in the completed mitigation initiatives identified in the following Section 9.1.6. In addition, the County identified specific integration activities that will be incorporated into procedures and are included in their updated mitigation strategy. The following textual summary and table identify relevant planning mechanisms and programs that have been/will be incorporated into County procedures, which may include former mitigation initiatives that have become continuous/on-going programs and may be considered mitigation “capabilities”:

### Integration of Hazard Mitigation into Existing and Future Planning Mechanisms

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

#### Planning

The County has a Strategic Operations Plan which includes areas of natural hazard risk (e.g. flood-prone areas, steep slopes) and refers to the Countywide Hazard Mitigation Plan. The County is MS4 regulated and has a Stormwater Management Plan which specifies projects/actions/initiatives to reduce the volume of stormwater, or otherwise mitigate stormwater flooding. All County Departments have completed Continuity of Operations Plans (COOPs). The County’s Comprehensive Emergency Management Plan refers to the Hazard Mitigation Plan. The County has a Post-Disaster Recovery Plan for debris management and removal, as well as cleanup of county facilities. The Plan does not currently refer to the HMP but will incorporate this HMP update.

**Comprehensive Plans:** Seven municipalities have updated or developed and adopted new comprehensive plans since 2013. The Town of Newark Valley, Town of Tioga and Town/Village of Spencer all created first-time comprehensive plans. The Towns of Berkshire, Candor and Richford, as well as the Village of Owego, all updated their comprehensive plans during the last five years.

The County Planning Director assisted each of the municipalities during the development or update of their plans. When doing so, it was recommended that each municipality incorporate some phrasing or section regarding hazard mitigation, and, in particular, flooding.



This was accomplished in all seven comprehensive plan instances. All of them mention in some fashion the protection of and avoiding development within the floodplain areas of their municipalities. Some mention hazard mitigation principles should be considered or implemented when development occurs in floodplains. Some incorporate their Hazard Mitigation Annex from 2013 by reference. Lastly, some even state that new development within FEMA's Special Flood Hazard Area must comply with the municipality's Flood Damage Prevention local law.

### **Regulatory and Enforcement (Ordinances)**

The County Planning Director utilizes hazardous features in the County's GIS system in GML 239 referrals.

**Site Plan Reviews:** Almost all municipalities in Tioga County, with the exception of one, have Site Plan Review regulations that apply to new commercial or industrial development. Under NYS General Municipal Law §239 l and m, applicants requesting Site Plan Review approval from a local planning board for individual projects that are located within 500 feet of state or county property, roads, NYS Agricultural District properties or municipal boundaries must be referred to the County Planning Board for review and recommendation. The County Planning Director conducts thorough analyses on these site plan review referrals for the Tioga County Planning Board. When proposed development is located within a floodplain, there is always a condition written that the applicant must comply with the municipality's Flood Damage Prevention law, and that the Local Flood Plain Administrator must issue a floodplain development certificate.

### **Operational and Administration**

The County Planning Director performs as the planner and incorporates natural hazard risk reduction. The County Planning Board makes recommendations on planning/zoning cases referred by municipalities. Hazardous features such as FEMA's Special Flood Hazard Areas are consistently assessed to make sure the proposed projects will comply with local regulations such as Flood Damage Prevention local laws. The County also has a new Local Emergency Planning Committee that will include managing natural hazard risk among its functions.

Stormwater Management functions within the County are performed by numerous Boards and individuals. The Southern Tier East Regional Planning Development Board and the Broome Tioga Stormwater Coalition perform MCM 1 and MCM 2 tasks. Wendy Walsh, CFM and CPESC performs MCM 4 and MCM tasks via contract with the Town of Owego. Tioga County DPW performs MCM 3 and MCM 6 tasks.

The County has staff who can perform Substantial Damage Estimates but does not have staff or contract with firms that have experience with developing Benefit-Cost Analysis or preparing grant applications for mitigation projects. The County noted that staff would benefit from additional trainings and certifications with respect to natural hazard risk management in Emergency Services, Public Health, Public Works, and Planning. Staff currently do not receive natural hazard risk reduction training and no staff have job descriptions that specifically include identifying and/or implementing mitigation projects/actions or other efforts to reduce natural hazard risk. However, the Hazard Mitigation Planning Committee, the Broome Tioga Stormwater Coalition, the Local Emergency Planning Committee support natural hazard risk reduction and build hazard management capabilities.

**Highway Departments:** In the past five years municipal officials in Tioga County have become increasingly aware and mindful of mitigation principles in their daily operations, particularly relating to flooding. Most municipal highway departments have realized that the size of culverts is inadequate. Most have an unwritten policy of up-sizing culverts when they need replacement. All municipalities now consult with Tioga County Soil & Water Conservation District before attempting debris removal in streams, bridge construction projects,



or other stream projects to ensure the projects will be constructed in a sustainable and environmentally-sensitive manner that will have long-lasting performance and benefits.

One challenge yet to overcome is to educate highway departments on road ditching and maintenance performed in a manner that reduces runoff velocity and sedimentation that occurs during storm events. It has been proven in Pennsylvania that techniques such as installing periodic check dams, using rocks for bedding, and diverting runoff into infiltration basins reduce runoff velocity, erosion, and sedimentation. These road-ditching methods need to be tested and proliferated throughout highway departments.

### Funding

The County municipal/operating budget does not include line items for mitigation projects/activities, but the County uses the County Capital Fund as needed for Building and Grounds mitigation-related projects. The County has pursued and been awarded grant funding for the following mitigation related projects:

- Emergency Services: County 911 telecommunications towers – used Statewide Interoperable Communications Grant to fortify buildings, added generators, and installed fencing to protect this equipment at all sites from weather and other damage prevention.
- Buildings and Grounds: Wet-proofed County Courthouse and Court Annex, raised electric system at 56 Main Street (County Office Building), protected elevators and boilers sub-ground level at 56 Main Street and Court Annex, generator installed at Highway’s automotive repair center. These were all done as recommended in a 2013 consultant-developed Structural Hazard Mitigation Plan for County Facilities impacted by the 2011 flood. County pays for all this up-front via the Capital Fund with expected future reimbursement. To date reimbursements have come from FEMA and NYSERDA.

The County does not have any other mechanisms identified to fiscally support hazard mitigation projects.

### Education and Outreach

The County performs public outreach to inform citizens about natural hazards (e.g. safe use of generators, emergency preparedness, flood hazard information) through FEMA and NY DHSES handouts and posters, the Emergency Services Department, and the County Facebook page.

## 9.1.6 Mitigation Strategy and Prioritization

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

### Past Mitigation Initiative Status

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

**Table 9.1-7. Status of Previous Mitigation Actions**

Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem and the Solution (Project)	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
						Cost		
1	Purchase and distribute alternate-powered (battery, solar or hand crank) NOAA weather radios to 20,300 households in County	All	Residents need a dependable method to receive weather information and information before and during disasters and periods of power interruptions	County Emergency Services Dept. (OES)	No Progress	Level of Protection	-	1. Include in 2018 HMP 2. 3.
						Damages Avoided; Evidence of Success	-	
2	Create and promote brochure and web page on county website – What to do in a Disaster Event for Citizens. Webpage will become County home page during disaster with information for residents	All	Not applicable as this is an ongoing capability	OES w/ support from IT, Public Health, Planning, Sheriff and SWCD	Ongoing Capability	Cost	-	1. Discontinue 2. 3. This item will be reduced to just website and social media. Refer to Section 6 (Mitigation Strategy) for details.
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
3	Develop outreach methods to educate public on Flood Hazard Areas and NFIP.	Flood	Not applicable as this is an ongoing capability	County Planning Dept. w/ support from ITCS / GIS	Ongoing Capability	Cost	-	1. Discontinue 2 3. Create a GIS story map. Refer to Section 6 (Mitigation Strategy) for details.
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
4	Promote the use of County website to have citizens input their cell phone numbers for reverse 911.	All	Not applicable as this is an ongoing capability	OES	Ongoing Capability	Cost	-	1. Discontinue 2. 3. Directing citizens to sign up for NY Alert. Refer to Section 6 (Mitigation Strategy) for details.
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
5	Create and Hire a Hazard Mitigation Plan Coordinator.	Drought, Flood, Severe Winter Storm,	Not applicable as this is an ongoing capability	County Planning Dept. and OES	Ongoing Capability	Cost	-	1. Discontinue 2.
						Level of Protection	-	





Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem and the Solution (Project)	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. 3. If discontinue, explain why.
		Severe Storm, Earthquake		contracting with TCSWCD		Damages Avoided; Evidence of Success	-	3. Continue annual Contract with TCSWCD for Hazard Mitigation Coordinator Services
6	Purchase 6-8 variable message signs with back up solar power. Message boards would be placed along main travel corridors to inform the Public of impending storm events.	All	Residents need a dependable method to receive information before and during disasters	County DPW and Emergency Services	In Progress	Cost	\$28,000 per	1. Include in 2018 HMP 2. Purchased 2 out of 8. Need to purchase more. 3.
						Level of Protection		
						Damages Avoided; Evidence of Success		
7	Purchase 4-6 automated flagging assistance devices with backup solar power to relieve manpower during severe storm events	All	Traffic safety is reduced during power interruptions during severe storm and hazard events	County DPW and Emergency Services	In Progress	Cost	\$15,000 per	1. Include in 2018 HMP 2. Purchased 1. Need 1 more. Also need 2 portable traffic signals. 3.
						Level of Protection		
						Damages Avoided; Evidence of Success		
8	Creation of social media outlets (Facebook, Twitter, MySpace) for Tioga County to inform public of flood hazards and severe storm events. Educate the public via the county website on how these applications can be used in an emergency situation.	All	Not applicable as this is an ongoing capability	Tioga County Sheriffs and OES, and Public Health	Ongoing Capability	Cost	Staff time	1. Discontinue 2. 3. This is an ongoing capability for the County and is further discussed in Section 6 (Mitigation Strategy).
						Level of Protection		
						Damages Avoided; Evidence of Success		
9	Develop annual articles or seminars on Flood Hazards to educate the public and keep them aware of the dangers of flooding.	Flood	Not applicable as this is an ongoing capability	Flood Education Committee	Ongoing Capability	Cost	Staff time	1. Discontinue 2. 3. This is an ongoing capability for the County and is further
						Level of Protection		
						Damages Avoided;		



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem and the Solution (Project)	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. 3. If discontinue, explain why.
						Evidence of Success		discussed in Section 6 (Mitigation Strategy).
10	Create/Enhance mutual aid agreements with neighboring communities for continuity of operations. Having such agreements in place will ensure the prompt availability of assistance from outside the disaster are so that essential government services will continue uninterrupted.	All	Not applicable as this is an ongoing capability	Law Office w/ support from all county depts.	Ongoing Capability	Cost	Staff time	1. Discontinue as this is an ongoing capability
						Level of Protection		2.
						Damages Avoided; Evidence of Success		3. Fire services, Highway Departments, Chemung County, law enforcement training exist. Need to put others in place.
11	Annually bid contracts with entities to provide essential services to the County in areas such as damage assessment, cleanup of county buildings, consulting services for FEMA/SOME paperwork, debris clean up and disposal, trucking services, road construction services, road construction products and document retrieval and stabilization.	All	Not applicable as this is an ongoing capability	Law Dept. w/ support from DPW, Budget Office, IT and Records Management	Ongoing Capability	Cost	Staff time	1. Discontinue as this is an ongoing capability
						Level of Protection		2.
						Damages Avoided; Evidence of Success		3. Continue developing annual bid contracts for critical disaster recovery services. Change "annual bids" to standing contracts
12	Produce county post disaster manuals to provide efficient procedures for continuity of good governmental	All	Not applicable as this is an ongoing capability	Law Dept w/ support from DPW and Budget Officer	Ongoing Capability	Cost	Staff time	1. Discontinue
						Level of Protection		2.
						Damages Avoided;		3. This is an ongoing capability for the County and is further



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem and the Solution (Project)	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. 3. If discontinue, explain why.
	procurement practices, managing vendors and contractors.					Evidence of Success		discussed in Section 6 (Mitigation Strategy).
13	Implement safe document archiving system to preserve important records	All	The County does not have proper archiving system for important records. Where they were stored is floodprone.	Records Management w/ support Law Dept and DPW	Complete	Cost	Staff Time	1. Discontinue
						Level of Protection	-	2.
						Damages Avoided; Evidence of Success	Reduce / eliminate damage to county records	3. County moved records storage facility out the floodplain to the HHS Complex.
14	Identification and mapping of historic and potential evacuation shelters and geodatabase entry of inventory of attributes such as facility capacity, duration of availability after a hazard event, staffing, contact information, suitability for different hazard events, etc.	All	Not applicable as this is an ongoing capability	GIS w/ support OES, Sheriff, Public Health	Ongoing Capability	Cost	Staff time	1. Discontinue
						Level of Protection		2.
						Damages Avoided; Evidence of Success		3. Create list of current designated Red Cross shelters and make a complete database and map
15	Map groundwater recharge areas. This will help identify areas that need to be protected in order to minimize loss of life and property due to drought conditions by ensuring that groundwater supplies are renewed during periods of rain and snowmelt	Drought	Unknown areas that need to be protected during drought.	GIS	Complete	Cost	Staff Time	1. Discontinue
						Level of Protection	-	2.
						Damages Avoided; Evidence of Success	Understanding of where groundwater recharge areas are located in the county	3. Have aquifers and groundwater recharge areas mapped
16		All		GIS	No Progress	Cost	\$100,000	1. Include in 2018 HMP



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem and the Solution (Project)	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
	Establishment of agreement with aerial photography company to capture geo-referenced ortho and oblique aerial imagery during and/or immediately after hazard events to provide information for response and recovery from incidents		County has no way to document overall extend of inundation and damages after a disaster event.to provide information for response and recovery			Level of Protection		2. Want to establish a new County contract with Pictometry during the next 5 years.
						Damages Avoided; Evidence of Success		3.
17	Mapping of Potential emergency response helicopter landing places	All	Not applicable as this is an ongoing capability	GIS	Ongoing Capability	Cost	Staff time	1. Discontinue
						Level of Protection		2.
						Damages Avoided; Evidence of Success		3. Initial analysis complete. Need to incorporate Red Cross shelter locations when available.
18	Mapping of relief supply routes.	All	County does not have accessible mapping of relief supply routes during and after a disaster	GIS Sheriff	No Progress	Cost	Staff time	1. Include in 2018 HMP
						Level of Protection		2. Complete during this Plan Update.
						Damages Avoided; Evidence of Success		3.
19	Identification and mapping of evacuation routes for residents living in flood zones for escape to shelters and to communicate hazard areas. Including the use of both hard copy and digital maps available on line and through mobile apps.	Flood	There is no existing mapping of evacuation routes to provide guidance to residents to shelter locations during and after a disaster event.	GIS	In Progress	Cost		1. Include in 2018 HMP
						Level of Protection		2. Will address when Red Cross Shelter locations become available.
						Damages Avoided; Evidence of Success		3.
20		All		GIS/NYS DOT	In Progress	Cost	Staff time	1. Include in 2018 HMP



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem and the Solution (Project)	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. 3. If discontinue, explain why.
	Internet and mobile app developed to obtain information from the public and emergency response personnel to identify roads impacted by downed trees and wires, damage to roads and bridges, etc.		Pilot mobile app has not been beta tested prior to deployment			Level of Protection		1. Created a mobile App whereby users can pin locate road blockages. Also created an App for DPW to verify blockages, indicated areas, and constantly update map in App. Needs testing and verification. 2. 3.
						Damages Avoided; Evidence of Success		
						Cost		
21	Install rain gauges for early flood warning system. (Expand IFLOWS network of precipitation and stream gauges).	Flood	More information is needed to predict flooding	OES w/ support SWCD	No Progress	Level of Protection		1. Include in 2018 HMP County and municipalities have made several attempts at HMGP funding with no success. Need to explore funding alternatives. 2. 3.
						Damages Avoided; Evidence of Success		
						Cost		
22	Develop flood response plan with this in place emergency responders and government personal will have a Standard Operating Procedure to facilitate their responsibility during and emergency	Flood	The County does not have a flood response plan to provide a standard operating procedure for emergency responders and government	EMO & Local Gov't Elected Officials	In Progress	Level of Protection		1. Include in 2018 HMP Covered somewhat in County Comprehensive Emergency Management Plan but needs to be improved with more detail. 2. 3.
						Damages Avoided; Evidence of Success		
						Cost	\$59,000 per year	1. Discontinue
23	Creation of full time EMO position based on increased frequency and intensity of disaster events	All	The County does not have a fulltime EMO	County Legislature	Complete	Level of Protection	-	2.
						Damages Avoided; Evidence of Success	Director available full time to the county to provide	3. County Legislature created the Department of Emergency Services in January 2018 and made the Director a full-time position.





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							emergency services needs to the county	
24	Develop and conduct training for contractors and highway personnel on emergency stream intervention during flood events.	Flood	Not applicable as this is an ongoing capability	SWCD	Ongoing Capability	Cost	Staff time plus \$5,000 equipment	1. Discontinue 2. 3. TC SWCD will continue to conduct these training sessions.
						Level of Protection		
						Damages Avoided; Evidence of Success		
25	Train contractors and highway personnel in environmentally sensitive maintenance of streams near culverts, roads and bridges.	Flood	Not applicable as this is an ongoing capability	SWCD	Ongoing Capability	Cost	Staff time	1. Discontinue 2. 3. TC SWCD will continue to conduct these training sessions.
						Level of Protection		
						Damages Avoided; Evidence of Success		
26	Educate town supervisors, highway superintendents, and other municipal leaders about stream management and flood mitigation	Flood	Not applicable as this is an ongoing capability	SWCD and Planning	Ongoing Capability	Cost		1. Discontinue 2. 3. Have done some, but would like to do more, especially regarding Local Floodplain Administrator training.
						Level of Protection		
						Damages Avoided; Evidence of Success		
27	Educate the public using scientific information to increase the understanding of the complexities of the problem, to gain support for possible solutions and to encourage the development of emergency plans.	Flood	Not applicable as this is an ongoing capability	Flood Education Committee	Ongoing Capability	Cost		1. Discontinue 2. 3. This is an ongoing capability for the County and discussed further in Section 6.
						Level of Protection		
						Damages Avoided; Evidence of Success		



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem and the Solution (Project)	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
28	Share website links for tracking the depth of the river.	Flood	Not applicable as this is an ongoing capability	Flood Education Committee	Ongoing Capability	Cost		1. Discontinue
						Level of Protection		2.
						Damages Avoided; Evidence of Success		3. Continue promoting the website link to SRBC's flood inundation maps – Susquehanna River Corridor only
29	Encourage municipal leaders to review and enforce current flood laws and regulations, as well as building codes.	Flood	Not applicable as this is an ongoing capability	Flood Education Committee	Ongoing Capability	Cost		1. Discontinue
						Level of Protection		2.
						Damages Avoided; Evidence of Success		3. Most needed is Local Floodplain Administrator Training. Refer to Section 6 (Mitigation Strategy) for details.
30	Develop communication strategies and emergency plans based on anticipated amounts of rain.	Flood	Not applicable as this is an ongoing capability	OES	Ongoing Capability	Cost		1. Discontinue
						Level of Protection		2.
						Damages Avoided; Evidence of Success		3. Continue collecting data to develop communication strategies and emergency plans. Refer to Section 6 (Mitigation Strategy) for details.
31	Review and update communication plans in each community. These should be coordinated across the county.	All	Communities currently do not have emergency plans	EMO	No Progress	Cost		1. Include in 2018 HMP
						Level of Protection		2. Need to develop emergency plans first.
						Damages Avoided; Evidence of Success		3.
32	Quantify and Qualify current condition of streams and stream corridors. A county wide stream investigation report for all watersheds will	Flood	Not applicable as this is an ongoing capability	SWCD and Upper Susquehanna Coalition (USC)	Ongoing Capability	Cost		1. Discontinue
						Level of Protection		2.
						Damages Avoided; Evidence of Success		3. USC will have two stream corridor assessments in Tioga County complete in 2018. Need to conduct two more in



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem and the Solution (Project)	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps
	allow us to create watershed strategies to disseminate to municipalities for future rehabilitation efforts.							1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. 3. If discontinue, explain why.
								the next five years. Refer to Section 6 (Mitigation Strategy) for details.
33	Identify and evaluate opportunities to alleviate flooding problems using structural projects that do not impair the benefits of existing floodplain functions (such as small impoundments, high flow channels, and wetland creation, etc.) Seek implementation for cost-effective practices.	Flood	Not applicable as this is an ongoing capability	SWCD USC USACE and NYDEC	Ongoing Opportunity	Cost		1. Discontinue 2.  NY Rising funded USC Regional River Initiative. Also, for the Village of Owego the USACE and NY DEC Upper Susquehanna River Basin Flood Reduction Feasibility Study. Refer to Section 6 (Mitigation Strategy) for details.
						Level of Protection		
						Damages Avoided; Evidence of Success		
34	Capture/survey/display high water marks from previous flood events.	Flood	County needs to document flood levels to provide history of inundation for public outreach and to support funding opportunities	SWCD	In Progress	Cost		1. Include in 2018 HMP Need to collect high-water marks from 2011 flood levels at the existing Community Flood Awareness signs locations. 2. 3.
						Level of Protection		
						Damages Avoided; Evidence of Success		
35	Support the protection of federally operated precipitation and river gauge systems from repeated threats of budget cuts and support the expansion of existing date	Flood	Not applicable as this is an ongoing capability	County Legislature/Flood Education Committee	Ongoing Capability	Cost		1. Discontinue 2. 3. Keep updated and aware of federal funding status for these river gauges. Currently gauges are funded but might not be permanent. Refer to Section 6
						Level of Protection		
						Damages Avoided; Evidence of Success		



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem and the Solution (Project)	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
	collection and data processing as warranted.							(Mitigation Strategy) for details.
36	Expand the use of strategically located signs that inform the public of flood hazards	Flood	Not applicable as this is an ongoing capability	Flood Education Committee	Ongoing Capability	Cost		1. Discontinue
						Level of Protection		2.
						Damages Avoided; Evidence of Success		3. Need to add 2011 flood levels on the existing Community Flood Awareness signs. Place new signs
37	Create one or more shelter locations outside of existing floodplain that can house up to 500 County residents for an extended period of time.	Flood	There is no large capacity shelter location in the County	Dept. of Social Services	No Progress	Cost		1. Include in 2018 HMP
						Level of Protection		2. This large capacity shelter is still a need but has not been addressed.
						Damages Avoided; Evidence of Success		3.
38	Flood proofing of the Tioga County Historic Courthouse	Flood	Tioga County Courthouse is located in the floodplain and has been damaged by floods in the past. It needs to be floodproofed in order to reduce flood damages.	DPW	Complete	Cost	\$290,000	1. Discontinue
						Level of Protection	100-year flood	2.
						Damages Avoided; Evidence of Success	Reduce / eliminate flood damage to building; allows to operate during emergencies	3. County Courthouse was dry flood-proofed.
39	Flood proofing of the Tioga County Court Annex and County Clerks Building	Flood	Tioga County Court Annex and Clerks Building is located in the floodplain and has been damaged by floods in the past. It needs to be floodproofed in order to reduce flood damages.	DPW	Complete	Cost	\$341,000	1. Discontinue
						Level of Protection	100-year flood	2.
						Damages Avoided; Evidence of Success	Reduce / eliminate flood damage to building; allows to operate	3. County Court Annex was dry-flood proofed.



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem and the Solution (Project)	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
							during emergencies	
40	Flood Proofing of Tioga County Office Building	Flood	Tioga County Office Building is located in the floodplain and has been damaged by floods in the past. It needs to be floodproofed in order to reduce flood damages.	DPW	Complete	Cost	\$300,000	1. Discontinue 2. 3. County Office Building was dry-flood proofed.
						Level of Protection	100-year flood	
						Damages Avoided; Evidence of Success	Reduce / eliminate flood damage to building; allows to operate during emergencies	
41	Relocate backup 911 generator to protect from future flood events.	Flood	911 backup generator is located in the floodplain and has been damaged by floods in the past. It needs to be floodproofed in order to reduce flood damages.	Sheriff w/ support from DPW	Complete	Cost	\$100,000	1. Discontinue 2. 3. 911 Back up was relocated out of the flood plain to Carmichael Hill.
						Level of Protection	-	
						Damages Avoided; Evidence of Success	Generator now located outside of the floodplain and not vulnerable to flood damage; allows 911 center to function during power outages and floods	
42	Construction of a new Tioga County Records Storage Facility to reduce flood vulnerability and to replace the records storage facility that was flooded outside of the flood area and	Flood	County records are stored in an area that is prone to flooding and risk being damaged.	DPW with support Buildings and Grounds	Complete	Cost	\$25,000	1. Discontinue 2. 3. Renovation of existing space to house the records storage needs of Tioga County.
						Level of Protection	100-year flood	
						Damages Avoided; Evidence of Success	Reduce / eliminate flood damage to buildings and records	





Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem and the Solution (Project)	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. 3. If discontinue, explain why.
	subsequently demolished							
43	Intersection of West River Road and Mt. Pleasant Road – Replace double cross pipes with a larger structure to allow for additional capacity during flood events	Flood	Intersection of West River Road and Mt. Pleasant Road prone to flooding and road closures	DPW	Complete	Cost	\$300,000	1. Discontinue
						Level of Protection	100-year flood	2.
						Damages Avoided; Evidence of Success	Reduce / eliminate flood damage to roadway infrastructure	3. Project has been completed
44	Mitigating elevator controls and power supply to elevators as well boilers at the County Court Annex and Clerks Building.	Flood	Elevator controls and power supply and boilers are located in the basement and at risk to flood damage	DPW	Complete	Cost	\$300,000	1. Discontinue
						Level of Protection	100-year flood	2.
						Damages Avoided; Evidence of Success	Reduce / eliminate flood damage to building; allows to operate during emergencies	3. Boilers and elevator power and controls were move to above first floor.
45	Mitigating elevator controls and power supply in County Courthouse	Flood	Elevator controls and power supply are located in the basement and at risk to flood damage	DPW	Complete	Cost	\$400,000	1. Discontinue
						Level of Protection	100-year flood	2.
						Damages Avoided; Evidence of Success	Reduce / eliminate flood damage to building; allows to operate during emergencies	3. Boiler and elevator controls were moved from basement to first floor.
46	Mitigation electric panels and elevator controls at County Office Building.	Flood	Electric panel and controls are located in the basement and at risk to flood damage	DPW	Complete	Cost	\$500,000	1. Discontinue
						Level of Protection	100-year flood	2.
						Damages Avoided; Evidence of Success	Reduce / eliminate flood damage to building;	3. Electric panels and elevator controls were moved to first floor in COB



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem and the Solution (Project)	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
							allows to operate during emergencies	
47	Gaskill Road Bridge Streambank Protection.	Flood	This area of the county is prone to flooding, road damages, and erosion.	DPW w/ support from SWCD	Complete	Cost	\$100,000	1. Discontinue
						Level of Protection	100-year flood	2.
						Damages Avoided; Evidence of Success	Reduce / eliminate flood damage to highway infrastructure	3. This project has been completed.
48	Dry Brook Creek culvert protection and streambank stabilization	Flood	This area of the county is prone to flooding, road damages, and erosion.	DPW w/ support from SWCD	Complete	Cost	\$100,000	1. Discontinue
						Level of Protection	100-year flood	2.
						Damages Avoided; Evidence of Success	Reduce / eliminate flood damage to highway infrastructure	3. This project has been completed.
49	Support the purchase, or relocate structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority.  Phase 1: Identify appropriate candidates for relocation based on cost-effectiveness versus retrofitting.  Phase 2: Where relocation is determined to be a	Flood, Severe Storm	Not applicable to the County is this done on the municipal level.	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	No Progress	Cost		1. Discontinue
						Level of Protection		2.
						Damages Avoided; Evidence of Success		3. This is all done at the municipal level and is not applicable to the County.



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	viable option, work with property owners toward implementation of that action based on available funding from FEMA and local match availability.							
50	Support municipal compliance with and good-standing in the NFIP including adoption and enforcement of floodplain management requirements (e.g. regulating all new and substantially improved construction in Special Hazard Flood Areas), floodplain identification and mapping, and flood insurance outreach to the community.	Flood, Severe Storms	Not applicable as this is an ongoing capability	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, ISO FEMA Planning	Ongoing Capability	Cost		1. Discontinue
						Level of Protection		2.
						Damages Avoided; Evidence of Success		3. Need to develop Local Floodplain Administrators training Refer to Section 6 (Mitigation Strategy) for details.
51	Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Section 7.0	All Hazards	Not applicable as this is an ongoing capability	Planning via SWCD	Ongoing Capability	Cost	\$20,000 per year	1. Discontinue
						Level of Protection		2.
						Damages Avoided; Evidence of Success		3. Need to continue SWCD Annual Contract for HMP Coordination Services along with annual budget allotment. Refer to Section 6 (Mitigation Strategy) for details.
52	Complete the ongoing updates of the Comprehensive	All Hazards	Not applicable as this is an ongoing capability	Municipality with support from OES and NYS DHSES	Ongoing Capability	Cost		1. Discontinue
						Level of Protection		2.



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	Emergency Management Plans					Damages Avoided; Evidence of Success		3. While the County updates their existing CEMP, municipalities need to develop more detailed and effective EMPs. Refer to Section 6 (Mitigation Strategy) for details.
53	Work with regional agencies (i.e. County and SOEM) to help develop damage assessment capabilities at the local level through such things as training programs, certification of qualified individuals (e.g. code officials, floodplain managers, engineers).	All Hazards	Not applicable as this is an ongoing capability	Municipality with support from State Building Code	Ongoing Capability	Cost		1. Discontinue
						Level of Protection		2.
						Damages Avoided; Evidence of Success		3. Training still needed – currently rely on help from CEDAR teams. Developing a mobile App is possible. Refer to Section 6 (Mitigation Strategy) for details.

### Completed Mitigation Initiatives Not Identified in the Previous Mitigation Strategy

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

- Culvert upsizing or conversion to bridges
  - DPW
  - A majority of culverts need assessment and implementation for County and all Municipalities
- Update County Departments' Continuation of Operations Plans (COOP)
  - LAW, with support from all departments
  - These COOPS need to be improved with more details, and somewhat standardized among departments

### Proposed Hazard Mitigation Initiatives for the Plan Update

Tioga County participated in a mitigation action workshop in July 11, 2018 and was provided the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 'Selecting Appropriate Mitigation Measures for Floodprone Structures' (March 2007) and FEMA 'Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards' (January 2013).

Table 9.1-8 summarizes the comprehensive-range of specific mitigation initiatives the County of Tioga would like to pursue in the future to reduce the effects of hazards. Some of these initiatives may be previous actions carried forward for this plan update. These initiatives are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. The four FEMA mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

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

Table 9.1-9 provides a summary of the prioritization of all proposed mitigation initiatives for the Plan update.

Tioga County created action worksheets for those they identified as high priority mitigation actions. Those actions are identified in Table 9.1-8 and completed action worksheets are included at the end of this annex.



Table 9.1-8. Proposed Hazard Mitigation Initiatives

Project Number	Project Name	Goals / Objectives Met	Hazard(s) Mitigated	Description of the Problem	Critical Facility (Yes / No)	EHP Issues	Timeline	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Potential Funding Sources	Priority	Mitigation Category
Tioga County-1 (former 1)	Purchase and distribute alternate-powered (battery, solar or hand crank) NOAA weather radios to 20,300 households in County	1-10, 2-2, 6-2	All	Residents need a dependable method to receive weather information and information before and during disasters and periods of power interruptions	No	No	Less than 5 years	County Emergency Services Dept. (OES)	All residents to have access to the weather during power outages; increase public awareness	High (\$50/household)	USDA – Rural Utilities Service	Medium	EAP
Tioga County-2 (former 6)	Purchase 6 variable message signs with back up solar power. Message boards would be placed along main travel corridors to inform the Public of impending storm events.	1-10, 2-2, 6-2	All	Residents need a dependable method to receive information before and during disasters	No	No	Less than 5 years	County DPW and Emergency Services	Enhance public outreach during emergencies – quicker way to distribute information	\$90,000	Emergency Management Performance Grants (EMPG) Program	Medium	EAP
Tioga County-3 (former 7)	Purchase automated flagging assistance device and 4 portable traffic signals with backup solar power to relieve manpower during severe storm events.	1-10, 2-2, 6-2	All	Traffic safety is reduced during power interruptions during severe storm and hazard events	No	No	Less than 5 years	County DPW and Emergency Services	Increase public safety when roads are closed; relieve manpower during severe storm events	\$65,000	Emergency Management Performance Grants (EMPG) Program	Medium	EAP
Tioga County-4 (former 16)	Establishment of agreement with aerial photography company, Pictometry, to capture geo-referenced ortho and oblique aerial imagery during and/or immediately after hazard events to provide information for response and	1-4, 2-3	All	County has no way to document overall extend of inundation and damages after a disaster event.to provide information for response and recovery	No	No	Less than 5 years	County GIS	County to gain better knowledge and understanding as to where areas are most vulnerable after a storm	\$100,000	FEMA HMGP or FMA	Medium	LPR, EAP



**Table 9.1-8. Proposed Hazard Mitigation Initiatives**

Project Number	Project Name	Goals / Objectives Met	Hazard(s) Mitigated	Description of the Problem	Critical Facility (Yes / No)	EHP Issues	Timeline	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Potential Funding Sources	Priority	Mitigation Category
	recovery from incidents												
Tioga County-5 (former 18)	Mapping of relief supply routes.	6-2, 6-3	All	County does not have accessible mapping of relief supply routes during and after a disaster	No	No	Less than 5 years	GIS and County Sheriff	Provide knowledge to county officials, municipalities, and residents as to where to find relief supplies during a disaster	Staff Time	County Budget	High	LPR, EAP
Tioga County-6 (former 19)	Once Red Cross Shelter locations become available, identification and mapping of evacuation routes for residents living in flood zones for escape to shelters and to communicate hazard areas. Including the use of both hard copy and digital maps available on line and through mobile apps.	6-2, 6-3	All	There is no existing mapping of evacuation routes to provide guidance to residents to shelter locations during and after a disaster event.	No	No	Less than 5 years	GIS, Public Health	Increase public awareness of evacuation routes in the County – everyone will have a better understanding of where to go in the event of an emergency	Staff Time	County Budget	Medium	EAP
Tioga County-7 (former 20)	Test and verify internet and mobile apps developed for users to pin locate road blockages and App for DPW to verify blockages, indicated areas, and constantly update map in App.	1-10, 5-2, 5-3	All	Pilot mobile app has not been beta tested prior to deployment	No	No	Less than 5 years	County GIS with support from NYS DOT	Ensures app works and DPW staff will not run into issues when using	Staff Time	County Budget	Medium	LPR, EAP
Tioga County-8	Install rain gauges for early flood warning system. (Expand IFLOWS	1-5, 2-2, 5-2	Flood, Severe Storm	More information is needed to predict flooding	No	No	Less than 5 years	OES with support from SWCD	Enhance the IFLOWS network in the county	Staff Time	County Budget	Medium	LPR, EAP

**Table 9.1-8. Proposed Hazard Mitigation Initiatives**

Project Number	Project Name	Goals / Objectives Met	Hazard(s) Mitigated	Description of the Problem	Critical Facility (Yes / No)	EHP Issues	Timeline	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Potential Funding Sources	Priority	Mitigation Category
(former 21)	network of precipitation and stream gauges).												
Tioga County-9 (former 22)	Develop flood response plan with this in place emergency responders and government personal will have a Standard Operating Procedure to facilitate their responsibility during and emergency	3-1, 6-2, 6-3	Flood	The County does not have a flood response plan to provide a standard operating procedure for emergency responders and government	No	No	Less than 5 years	OES with support from municipalities	Provide specific tasks and duties of county staff and departments during flood events; enhance public safety	Staff Time	County Budget, FEMA PDM	Medium	LPR
Tioga County-10 (former 31)	Work with municipalities to develop individual emergency plans.	1-10, 6-2	All	Communities currently do not have emergency plans	No	No	Less than 5 years	OES with support from municipalities	Increase municipal capabilities during emergencies	Staff Time	County Budget	Medium	LPR
Tioga County-11 (former 34)	Collect high-water marks from 2011 flood levels and subsequent floods at the existing Community Flood Awareness signs locations.	1-3, 1-4	Flood	County needs to document flood levels to provide history of inundation for public outreach and to support funding opportunities	No	No	Less than 5 years	SWCD	Provide a better understanding as to where flooding can reach throughout the county	Staff Time	County Budget	Medium	LPR, EAP
Tioga County-12 (former 37)	Identify a location for a high-capacity shelter in the county; seek funding and construction shelter.	6-2	All	There is no large capacity shelter location in the County	No	No	Less than 5 years	Dept. of Social Services	Provide shelter for county residents	Staff Time	County Budget for location; HUD and CDBG for shelter construction	Medium	LPR, SIP
Tioga County-13	Countywide Basement Clean-Out Program	See Action Worksheet for Details											
Tioga County-14	County Highway & Public Works Complex	See Action Worksheet for Details											



Table 9.1-8. Proposed Hazard Mitigation Initiatives

Project Number	Project Name	Goals / Objectives Met	Hazard(s) Mitigated	Description of the Problem	Critical Facility (Yes / No)	EHP Issues	Timeline	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Potential Funding Sources	Priority	Mitigation Category
Tioga County-15	Construction and Demolition Recycling and Debris Management Facility	See Action Worksheet for Details											
Tioga County-16	Shared Services Satellite Facility for County Highway & Public Works	See Action Worksheet for Details											
Tioga County-17	Countywide Sheltering Plan and Program	See Action Worksheet for Details											
Tioga County-18	Develop an online tool for communities to record losses, damages, road closures, emergency responses, etc. after a hazard event occurs. This will provide the County with a central location of all loss information which will benefit the county and municipalities if a FEMA declaration is issued for the county.	All	All	There is currently no way of tracking losses in a central location after an emergency occurs. This makes it difficult for the county to understand where the damages are and how much monetary losses municipalities sustained.	No	No	Within 2 Years	County Planning, County SWCD, and Emergency Management	Increase understanding of losses, identify areas that need mitigation	\$25,000	County and Municipal Budgets	High	LPR, EAP
Tioga County-19	Climate Change Integration - While considering, planning, engineering and undertaking projects throughout the County, the County will review and incorporate the latest information on climate change projections. Current climate projections information is available from the following sources: <ul style="list-style-type: none"> <li>Northeast Regional Climate Center's Intensity Duration Frequency Curves For New York State (<a href="http://ny-idf-projections.nrc.cornell.edu/">http://ny-idf-projections.nrc.cornell.edu/</a>) – a station is located in the Town of Candor and provides area-specific projections that will be beneficial to Tioga County</li> <li>Cornell University's Climate Change Facts (<a href="https://ecommons.cornell.edu/bitstream/handle/1813/54952/CornellClimateChange_NYs_Changing_Climate-FINAL-28kcgiv.pdf?sequence=1&amp;isAllowed=y">https://ecommons.cornell.edu/bitstream/handle/1813/54952/CornellClimateChange_NYs_Changing_Climate-FINAL-28kcgiv.pdf?sequence=1&amp;isAllowed=y</a>)</li> <li>NYSERDA's ClimAid report and 2014 updated climate projections, including temperature, precipitation, and extreme events (<a href="https://www.nyserda.ny.gov/About/Publications/Research-and-Development-Technical-Reports/Environmental-Research-and-Development-Technical-Reports/Response-to-Climate-Change-in-New-York">https://www.nyserda.ny.gov/About/Publications/Research-and-Development-Technical-Reports/Environmental-Research-and-Development-Technical-Reports/Response-to-Climate-Change-in-New-York</a>)</li> <li>NYS DEC's Climate Smart Communities program (<a href="http://www.dec.ny.gov/energy/50845.html">http://www.dec.ny.gov/energy/50845.html</a>)</li> <li>NYS Community Risk and Resiliency Act (adopted Sep 2014) (<a href="https://www.dec.ny.gov/energy/102559.html">https://www.dec.ny.gov/energy/102559.html</a>)</li> </ul>												
	See above	All	All	Local municipalities need to take action to reduce	No	No	Within 1 year	County Planning, County SWCD	Increase understanding of climate change impacts	<\$15,000	County Budget	High	LPR, EAP

**Table 9.1-8. Proposed Hazard Mitigation Initiatives**

Project Number	Project Name	Goals / Objectives Met	Hazard(s) Mitigated	Description of the Problem	Critical Facility (Yes / No)	EHP Issues	Timeline	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Potential Funding Sources	Priority	Mitigation Category
				greenhouse gas emissions and adapt to a changing climate.					in the county; integration of projections into day-to-day operations of municipalities				
Tioga County-20	Through the NYS Climate Resilient Farming Grant, the county will conduct a streambank stabilization project with buff and wetland implementation on a farm in the Town of Spencer. The project will include stabilizing the streambank with a 14 acre buffer, creation of 3.4 acres of wetlands, and planting 3.5 acres of trees.	All	Flood, Severe Storm	The current area in the Town of Spencer is prone to washouts, runoff into streams, and flooding of roadways and agricultural areas.	No	No	Within 5 years	County SWCD with support from the Town of Spencer and farm owner	This project will allow the farm to mitigate greenhouse gas emissions while increasing its resiliency to the changing climate.	\$200,000	NYS Climate Resilient Farming Grant	Medium	SIP

*Notes:*

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

**Acronyms and Abbreviations:**

CAV	Community Assistance Visit
CRS	Community Rating System
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
FPA	Floodplain Administrator
HMA	Hazard Mitigation Assistance
N/A	Not applicable
NFIP	National Flood Insurance Program
OEM	Office of Emergency Management

**Potential FEMA HMA Funding Sources:**

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

**Timeline:**

*The time required for completion of the project upon implementation*

**Cost:**

*The estimated cost for implementation.*

**Benefits:**

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



Mitigation Category:

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

Critical Facility:


- Yes  - Critical Facility located in 1% floodplain



Table 9.1-9. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
Tioga County-1 (former 1)	Purchase and distribute alternate-powered (battery, solar or hand crank) NOAA weather radios to 20,300 households in County	1	0	1	1	0	1	0	0	0	1	1	1	0	0	7	Medium
Tioga County-2 (former 6)	Purchase 6 variable message signs with back up solar power. Message boards would be placed along main travel corridors to inform the Public of impending storm events.	1	0	1	1	0	1	0	0	0	1	1	1	0	0	7	Medium
Tioga County-3 (former 7)	Purchase automated flagging assistance device and 4 portable traffic signals with backup solar power to relieve manpower during sever storm events.	1	0	1	1		1	0	0	0	1	1	1	0	0	7	Medium
Tioga County-4 (former 16)	Establishment of agreement with aerial photography company, Pictometry, to capture geo-referenced ortho and oblique aerial imagery during and/or immediately after hazard events to provide information for response and recovery from incidents	1	1	1	1	0	1	0	0	0	0	1	1	0	1	8	Medium
Tioga County-5 (former 18)	Mapping of relief supply routes.	1	0	1	1	0	1	1	0	0	1	1	1	1	1	10	High
Tioga County-6 (former 19)	Once Red Cross Shelter locations become available, identification and mapping of evacuation routes for residents living in flood zones for escape to shelters and to communicate hazard areas. Including the use of both hard copy and digital maps	1	0	1	1	0	1	1	0	0	0	1	1	1	1	9	Medium



Table 9.1-9. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
	available on line and through mobile apps.																
Tioga County-7 (former 20)	Test and verify internet and mobile apps developed for users to pin locate road blockages and App for DPW to verify blockages, indicated areas, and constantly update map in App.	1	1	1	1	0	1	1	0	0	1	1	1	0	0	9	Medium
Tioga County-8 (former 21)	Install rain gauges for early flood warning system. (Expand IFLOWS network of precipitation and stream gauges).	1	1	1	1	0	0	1	0	0	0	0	1	0	0	6	Medium
Tioga County-9 (former 22)	Develop flood response plan with this in place emergency responders and government personal will have a Standard Operating Procedure to facilitate their responsibility during and emergency	1	1	1	1	0	1	0	0	0	1	0	1	1	0	8	Medium
Tioga County-10 (former 31)	Work with municipalities to develop individual emergency plans.	1	1	1	1	0	0	1	0	0	1	1	1	0	0	8	Medium
Tioga County-11 (former 34)	Collect high-water marks from 2011 flood levels at the existing Community Flood Awareness signs locations.	1	1	1	1	0	1	1	0	0	1	0	1	0	0	8	Medium
Tioga County-12 (former 37)	Identify a location for a high-capacity shelter in the county; seek funding and construction shelter.	1	0	1	1	0	0	0	0	0	0	1	1	1	1	7	Medium
Tioga County-13	Countywide Basement Clean-Out Program	0	1	1	0	1	1	0	1	1	0	1	1	1	1	10	High





Table 9.1-9. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
Tioga County-14	County Highway & Public Works Complex	1	1	1	1	1	0	0	1	0	1	1	0	1	1	10	High
Tioga County-15	Construction and Demolition Recycling and Debris Management Facility	0	1	1	1	1	0	0	1	1	1	1	0	1	1	10	High
Tioga County-16	Shared Services Satellite Facility for County Highway & Public Works	1	1	1	1	1	0	0	1	0	1	1	0	1	1	10	High
Tioga County-17	Countywide Sheltering Plan and Program	1	1	1	1	1	1	0	0	1	1	1	0	1	0	10	High
Tioga County-18	Develop an online tool for communities to record losses, damages, road closures, emergency responses, etc. after a hazard event occurs.	1	1	1	1	1	1	0	0	1	1	1	1	1	0	11	High
Tioga County-19	Climate Change Integration	1	1	1	1	0	0	0	1	0	1	1	1	1	0	9	Medium

Note: Refer to Section 6, which conveys guidance on prioritizing mitigation actions.

Projects with totals of less than 5 were identified as low; projects with totals of 5 to 9 were identified as medium; and projects with totals of greater than 9 were identified as high.



### **9.1.7 Future Needs To Better Understand Risk/Vulnerability**

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None at this time.

### **9.1.8 Hazard Area Extent and Location**

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Hazard area extent and location maps have been generated for the County of Tioga that illustrate the probable areas impacted within the municipality. These maps are based on the best available data at the time of the preparation of this plan and are considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the County of Tioga has significant exposure. County-wide hazard maps are included in Section 5 of this plan. Municipal hazard profiles are included within Section 5.4, Volume I of this Plan.



Action Worksheet			
<b>Project Name:</b>	Countywide Basement Clean-Out Program		
<b>Project Number:</b>	Tioga County-13		
Risk / Vulnerability			
<b>Hazard(s) of Concern:</b>	All		
<b>Description of the Problem:</b>	People in general have the tendency to store hazardous materials, clothing, heating oil, etc. in their basement. When basements flood (groundwater coming up, riverine, etc.), some the material that could have been recycled or reused is now garbage and contaminating the water in the basement. This leads to contamination of groundwater, homes, etc. The cost for post-disaster cleanup is far greater than developing a program.		
Three Alternatives Considered (including No Action)			
<b>Alternatives:</b>	<b>Action</b>	<b>Estimated Cost</b>	<b>Evaluation</b>
	No Action	\$0	Current problem continues
	Educational programs	\$50,000	Just get messages out to the public
	Enforce an ordinance for proper household hazardous waste disposal	<\$5,000	More logistics in enforcing the ordinance; may need more staff
Action or Project Intended for Implementation			
<b>Description of the Solution:</b>	Develop a countywide basement clean-out program to help residents dispose of household hazardous waste properly and prevent contamination during periods of flooding. The county proposes to hire a company to host a drop-off location in each municipality and advertise the pick-up in local news media outlets and social media. If funding is greater, the county will host a curbside pickup program. The county will also develop a public outreach program to inform residents of the importance of disposing wastes properly. This program will help with the proper disposal of household chemicals, wastes, etc.		
<b>Is this project related to a Critical Facility?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
<b>Is this project related to a Critical Facility located within the 100-year floodplain?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
<b>Level of Protection:</b>	Health and safety of residents and the environment	<b>Estimated Benefits (losses avoided):</b>	Health and safety of residents and the environment, educating residents about cleaning basements, etc.
<b>Useful Life:</b>	25 years	<b>Goals Met:</b>	All
<b>Estimated Cost:</b>	\$200,000 - \$400,000	<b>Mitigation Action Type:</b>	Local Planning and Regulations (LPR) and Education and Awareness Programs (EAP)
Plan for Implementation			
<b>Prioritization:</b>	Medium	<b>Desired Timeframe for Implementation:</b>	Within 1 year of receiving funds
<b>Estimated Time Required for Project Implementation:</b>	Within 1 year of receiving funds	<b>Potential Funding Sources:</b>	County budget; NYSDEC Household Hazardous Waste Program
<b>Responsible Organization:</b>	County Solid Waste and Public Health	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	Hazard Mitigation, Capital Improvements
Progress Report (for plan maintenance)			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			



Action Worksheet		
<b>Project Name:</b>	Countywide Basement Clean-Out Program	
<b>Project Number:</b>	Tioga County-13	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	
Cost-Effectiveness	1	
Technical	0	
Political	1	
Legal	1	
Fiscal	0	Need to seek funding to complete this project
Environmental	1	
Social	1	
Administrative	0	
Multi-Hazard	1	All hazards
Timeline	1	Project will be completed within five years once funding obtained
Agency Champion	1	
Other Community Objectives	1	
<b>Total</b>	10	
<b>Priority (High/Med/Low)</b>	High	



Action Worksheet			
<b>Project Name:</b>	County Highway & Public Works Complex		
<b>Project Number:</b>	Tioga County-14		
Risk / Vulnerability			
<b>Hazard(s) of Concern:</b>	All		
<b>Description of the Problem:</b>	Two separate buildings – buildings and grounds; and highway/admin complex – are located within the 1% annual chance flood area. In 2011, both facilities flooded, damaging equipment and the building structure, estimated at \$1 million in damages. The buildings were constructed in the early 1900s and are in need of replacement and relocation. Several structures that are part of the complex have also experienced flooding and damages. This complex has the potential to be utilized as an emergency shelter.		
Three Alternatives Considered (including No Action)			
<b>Alternatives:</b>	<b>Action</b>	<b>Estimated Cost</b>	<b>Evaluation</b>
	No Action	\$0	Current problem continues
	Floodproof structures	\$500,000	Most likely could not be done based on the age, building material types, etc. – not feasible
Action or Project Intended for Implementation			
<b>Description of the Solution:</b>	Identify new location for the facility and get building blueprints, permits, etc. to construct a new facility outside of the floodplain that will serve as the county highway and public works complex. It will hold equipment, offices, emergency shelter, roadway maintenance, and grounds/building maintenance. By having the facility complex located outside of the floodplain, it will reduce/eliminate flood damage and allow the department to fully function during an emergency.		
<b>Is this project related to a Critical Facility?</b>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
<b>Is this project related to a Critical Facility located within the 100-year floodplain?</b>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
<b>Level of Protection:</b>	100-year flood	<b>Estimated Benefits (losses avoided):</b>	Allow for continuity of operations during disasters, serve as an emergency shelter for residents, no more repairs and/or flood losses to the existing building, maintain service to the traveling public, minimize flood damage to roadways
<b>Useful Life:</b>	100+ years	<b>Goals Met:</b>	All
<b>Estimated Cost:</b>	\$2 – 3 million	<b>Mitigation Action Type:</b>	Structure and Infrastructure Program
Plan for Implementation			
<b>Prioritization:</b>	High	<b>Desired Timeframe for Implementation:</b>	Within 6 months of obtaining funding
<b>Estimated Time Required for Project Implementation:</b>	Minimum of 5 years	<b>Potential Funding Sources:</b>	Community Development Block Grant (CDBG), U.S. Department of Agriculture Community Facilities Grant
<b>Responsible Organization:</b>	Tioga County DPW and supporting agencies (Economic Development)	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	Hazard Mitigation, Capital Improvements
Progress Report (for plan maintenance)			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			



Action Worksheet		
<b>Project Name:</b>	County Highway & Public Works Complex	
<b>Project Number:</b>	Tioga County-14	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	Allow for continuity of operations during a hazard event
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	0	
Fiscal	0	Need to seek funding for project
Environmental	1	
Social	0	
Administrative	1	
Multi-Hazard	1	All hazards
Timeline	0	
Agency Champion	1	
Other Community Objectives	1	
<b>Total</b>	10	
<b>Priority (High/Med/Low)</b>	High	



Action Worksheet			
<b>Project Name:</b>	Construction and Demolition Recycling and Debris Management Facility		
<b>Project Number:</b>	Tioga County-15		
Risk / Vulnerability			
<b>Hazard(s) of Concern:</b>	All		
<b>Description of the Problem:</b>	Currently, the southern tier does not have a construction and demolition recycling facility and the County does not have a dedicated debris management site. In 2011, after the flooding, much of the waste was taken to landfills outside of the county. If a construction and demolition facility was available, much of the material could have been reused and recycled. Additionally, some of the material could have qualified for a beneficial use determination and reused to make a new product or as a substitute for other materials.		
Three Alternatives Considered (including No Action)			
<b>Alternatives:</b>	<b>Action</b>	<b>Estimated Cost</b>	<b>Evaluation</b>
	No Action	\$0	Current problem continues
	Just have a debris management site	\$250,000 - \$500,000	Wouldn't solve construction and demolition issue but at least the county would have a designated debris management site
Action or Project Intended for Implementation			
<b>Description of the Solution:</b>	Public-private partnership with Taylor Garbage – the county would work with them to obtain funding. Identify a location for the facility, obtain permits, and construct facility. This would reduce waste to the landfill, save money, save time on identifying debris sites in the county, and reuse recycled materials (i.e. mulch) around the county. This would also ensure proper disposal of materials from private homes and commercial buildings throughout Tioga County.		
<b>Is this project related to a Critical Facility?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
<b>Is this project related to a Critical Facility located within the 100-year floodplain?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
<b>Level of Protection:</b>	100-year flood	<b>Estimated Benefits (losses avoided):</b>	reduce waste to the landfill, save money, save time on identifying debris sites in the county, and reuse recycled materials (i.e. mulch) around the county
<b>Useful Life:</b>	20+ years	<b>Goals Met:</b>	All
<b>Estimated Cost:</b>	\$5 - 7 million	<b>Mitigation Action Type:</b>	Structure and Infrastructure Project
Plan for Implementation			
<b>Prioritization:</b>	High	<b>Desired Timeframe for Implementation:</b>	Within 1 year of obtaining funds
<b>Estimated Time Required for Project Implementation:</b>	Within 3 years after funding is received	<b>Potential Funding Sources:</b>	NYSDEC Municipal Waste Reduction and Recycling Program
<b>Responsible Organization:</b>	County Solid Waste and DPW with support from Taylor Garbage	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	Hazard Mitigation, Capital Improvements, Debris Management
Progress Report (for plan maintenance)			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			





Action Worksheet		
<b>Project Name:</b>	Construction and Demolition Recycling and Debris Management Facility	
<b>Project Number:</b>	Tioga County-15	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	
Cost-Effectiveness	1	
Technical	1	The project is technically feasible and is a long-term solution for debris management in the County
Political	1	
Legal	0	
Fiscal	0	Need to seek grant funding to complete project
Environmental	1	No adverse impacts on the environment
Social	1	
Administrative	1	
Multi-Hazard	1	All hazards
Timeline	0	
Agency Champion	1	
Other Community Objectives	1	
<b>Total</b>	10	
<b>Priority (High/Med/Low)</b>	High	



Action Worksheet			
<b>Project Name:</b>	Shared Services Satellite Facility for County Highway & Public Works		
<b>Project Number:</b>	Tioga County-16		
Risk / Vulnerability			
<b>Hazard(s) of Concern:</b>	All		
<b>Description of the Problem:</b>	<p>During hazard events that lead to flooding, road closures, etc., access is cut off in the south side area of the Susquehanna River. There is currently no way to get to this area of the County during floods and road closures and this area is cut off from the rest of Tioga County.</p> <p>Access to the south side of the Susquehanna River is minimal to the DPW – cannot access a minimum of 8 roads. In the event of a flood, cannot get across the river and the DPW cannot maintain the roads and need to allow on the municipal departments to keep both the local and county roads open. Bridges can be closed up to a week after a flood event.</p>		
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Construct temporary garages to store equipment before an event	<\$5,000	Not a permanent solution, will not protect equipment from all-weather types
	Purchase office trailer for satellite office	<\$20,000	Not a permanent solution, no storage solution for equipment
Action or Project Intended for Implementation			
<b>Description of the Solution:</b>	Construct a shared services satellite facility for Public Works, Buildings/Grounds, Public Health, and Public Safety to utilize during severe weather events. The facility would be located on the southside of the Susquehanna River. The office will also store equipment that can be used to aide in clean-up efforts after a flood or storm. Prior to an event, the facility will be stocked up with equipment that may be needed after the event. This facility would allow for continuity of operations.		
<b>Is this project related to a Critical Facility?</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
<b>Is this project related to a Critical Facility located within the 100-year floodplain?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
<b>Level of Protection:</b>	100-year flood	<b>Estimated Benefits (losses avoided):</b>	Allow for continuity of operations during disasters, serve as an emergency shelter for residents, maintain service to the traveling public, minimize flood damage to roadways
<b>Useful Life:</b>	100+ years	<b>Goals Met:</b>	All
<b>Estimated Cost:</b>	\$2 – 3 million	<b>Mitigation Action Type:</b>	Structure and Infrastructure Projects
Plan for Implementation			
<b>Prioritization:</b>	High	<b>Desired Timeframe for Implementation:</b>	Within 6 months of obtaining funding
<b>Estimated Time Required for Project Implementation:</b>	Minimum of 5 years	<b>Potential Funding Sources:</b>	U.S. Department of Commerce's Economic Development Administration Public Works Grant; U.S. Department of Agriculture Community Facilities grant
<b>Responsible Organization:</b>	Tioga County DPW and supporting agencies (Economic Development)	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	Hazard Mitigation, Capital Improvements
Progress Report (for plan maintenance)			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			



Action Worksheet		
<b>Project Name:</b>	County DPW Satellite Facility on south side of Susquehanna River	
<b>Project Number:</b>	Tioga County-16	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Allow for continuity of operations during a hazard event – this area of the county can become inaccessible during flood events
Property Protection	1	Allow for continuity of operations during a hazard event – this area of the county can become inaccessible during flood events
Cost-Effectiveness	1	
Technical	1	Project is technically feasible and a long-term solution to an issue that occurs during every flood event
Political	1	
Legal	0	
Fiscal	0	Need to seek funding for project
Environmental	1	
Social	0	
Administrative	1	
Multi-Hazard	1	All hazards
Timeline	0	
Agency Champion	1	
Other Community Objectives	1	
Total	10	
Priority (High/Med/Low)	High	



Action Worksheet			
<b>Project Name:</b>	Countywide Sheltering Plan and Program		
<b>Project Number:</b>	Tioga County-17		
Risk / Vulnerability			
<b>Hazard(s) of Concern:</b>	All		
<b>Description of the Problem:</b>	During times of disaster, taking shelter is critical. In Tioga County, there is no sheltering program in place. The establishment or designation of emergency shelters and emergency medical shelters occur after a state of emergency is declared in the County. However, without a formal sheltering program in place, it is unknown as to where established shelters will be located in Tioga County. While there are shelters located throughout the county, they are not county-designated shelters, and most do not fit the needs for all residents. The County Department of Public Health recognized the need for a more detailed and integrated approach for sheltering individuals in the county. Part of the County's CEMP, one of the initiatives is to establish high capacity shelter sites outside of the floodplain. Another initiative includes a digital database and mapping routes of evacuation shelters and routes.		
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Does not meet the need for the county
	Continue with the current sheltering plan	No cost	Not an ideal solution as many of the existing facilities used as shelters do not meet the needs of individuals who require additional assistance
Action or Project Intended for Implementation			
<b>Description of the Solution:</b>	<p>Tioga County will develop a formal countywide sheltering plan. Public Health, working with Emergency Services, Planning and each municipality, will support the Community Organization Active in Disasters (COAD) in developing this plan. The plan will include an inspection of all existing shelters to understand their ability to support residents in the time of need. This will be the basis as to identifying a pre-selected list of facilities. The list will include shelter locations in each municipality that have been pre-selected based on the following: accessibility for people with functional needs; generator accessibility to power entire facility; preference of municipal officials; capacity to shelter population in need; adequate parking; shower and restroom facilities; food storage and preparation capability; and provide sheltering service to those with and without special or functional needs. The shelters will meet standards set by the American Red Cross.</p> <p>The plan will include, but not limited to, the following: how the plan will be updated and maintained; concept of shelter operations; dissemination of public information (where the shelters are located, evacuation routes, etc.); shelter intake procedures; shelter equipment, supplies, and staffing; and financial protocols, plans, policies, and procedures.</p>		
<b>Is this project related to a Critical Facility?</b>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
<b>Is this project related to a Critical Facility located within the 100-year floodplain?</b>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
<b>Level of Protection:</b>	The shelters will be located out of the 100-year flood area	<b>Estimated Benefits (losses avoided):</b>	This project will allow the county to have a clear and direct sheltering program in place. It would provide some ease to residents in the time of need when they need to seek refuge outside of their home.
<b>Useful Life:</b>	Project would not protect against a hazard but would provide a safe location for residents to go in the event of a hazard	<b>Goals Met:</b>	All
<b>Estimated Cost:</b>	Less than \$75,000 to develop the plan	<b>Mitigation Action Type:</b>	Local Planning and Regulations (LPR)
Plan for Implementation			
<b>Prioritization:</b>	High	<b>Desired Timeframe for Implementation:</b>	Within one year
<b>Estimated Time Required for Project Implementation:</b>	One year	<b>Potential Funding Sources:</b>	Department budget; HUD Emergency Solutions Grants Program
<b>Responsible Organization:</b>	Community Organizations Active in Disasters (COAD) with support from Tioga County Department of Public Health, Emergency Services and Planning	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	Comprehensive Emergency Management Plan, Hazard Mitigation Plan
Progress Report (for plan maintenance)			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			



Action Worksheet		
<b>Project Name:</b>	Countywide Sheltering Plan and Program	
<b>Project Number:</b>	Tioga County-17	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Provide a place of refuge for residents who are evacuated from their homes
Property Protection	1	
Cost-Effectiveness	1	
Technical	1	Long-term solution as the county does not have a countywide sheltering plan or program in place
Political	1	
Legal	1	
Fiscal	0	County funds for plan; grant funding for implementing plan findings
Environmental	0	
Social	1	
Administrative	1	
Multi-Hazard	1	All hazards
Timeline	0	
Agency Champion	1	
Other Community Objectives	0	
<b>Total</b>	10	
<b>Priority (High/Med/Low)</b>	High	

## 9.2 TOWN OF BARTON

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



**2010 Population: 4144**  
**Population in 100 year Floodplain (SFHA): 352**

**Land Area: 36,816 acres**  
**Land Area in Floodplain: 5.0%**  
**NFIP policies: 21**  
**NFIP Policies in SFHA: 16**  
**NFIP Claims: 74**  
**Total NFIP Losses: \$1.2 million**



**Number of Buildings: 1972**  
**Total Replacement Building Value: \$591 million**  
**Number of Buildings in the SFHA: 162**  
**Total Replacement Building Value Exposed in the SFHA: \$41.7million**

**Mitigation Focus**  
**Flood and Multi Hazard**





### 9.2.1 Hazard Mitigation Plan Point of Contact

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

Primary Point of Contact	Alternate Point of Contact
Leon Cary, Supervisor Phone: 607-565-2261 ext.2 Email: <a href="mailto:bartonclerk@stny.rr.com">bortonclerk@stny.rr.com</a>	Chris Spaulding, Highway Superintendent Phone: 607-738-1718 Email: <a href="mailto:chrisspau12@icloud.com">chrisspau12@icloud.com</a>

### 9.2.2 Municipal Profile

The Town of Barton is located in Tioga County, New York. The is the second largest town in Tioga County and is situated between the Susquehanna River and the Chemung River and lies in the southwestern corner of Tioga County. The town consists of 59.63 square miles and is bordered Bradford County, Pennsylvania to the south, Chemung County to the west, the Town of Spencer to the north, and the Town of Tioga and Nichols to the east<sup>1</sup>.

The Town of Barton includes the Village of Waverly and the hamlets of Barton and Lockwood, as part of the Halsey Valley. The Southern Tier Expressway (New York State Route 17) passes across the town next to the Susquehanna River. New York State Route 17C also follows the river, but on the north side. New York State Route 34 is a north-south highway that intersects NY-17C at Waverly.

The town is governed by a supervisor and four council members. According to the 2010 Census, the community's population was 4,414.

#### Growth/Development Trends

The Town of Barton did not note any recent residential/commercial development since 2012 or any major residential or commercial development, or major infrastructure development planned for the next five years in the municipality.

### 9.2.3 Natural Hazard Event History Specific to the Municipality

Per the Town of Barton Flood Mitigation Plan (no date), within the town there many small streams, Chemung River, Susquehanna River and Cayuta Creek.

Historically these streams rise one or twice a year, causing flooding in many areas of the town. At times it has closed Rt. 17C, Old Barton Rd. and Rt. 34. Historically these streams rise one or twice a year, causing flooding in many areas of the town. At times it has closed Rt. 17C, Old Barton Rd. and Rt. 34.

Tioga County has a history of natural and non-natural hazard events as detailed in Volume I, Section 5.0 of this plan. A summary of historical events is provided in each of the hazard profiles and includes a chronology of events that have affected the County and its municipalities. For the purpose of this plan update, events that have occurred in the County from 2012 to December 31, 2017 were summarized to indicate the range and impact of hazard events in the community. Information regarding specific damages is included, if available, based on reference material or local sources. This information is presented in the table below. For details of these and additional events, refer to Volume I, Section 5.0 of this plan.

<sup>1</sup> Town of Barton, 2012 ([www.waverlybarton.com](http://www.waverlybarton.com))



**Table 9.2-1. Hazard Event History**

Dates of Event	Event Type (Disaster Declaration if applicable)	Tioga County Designated?	Summary of Damages/Losses
6/14/15	N/A Flash Flood	N/A	Experienced just shy of 4" in less than 40 minutes. In some areas roads were washed out and homes were affected. Specifically, Steenberg Rd, Ridge Rd., Stone Quarry, Capwell, DePew Rd. were washed out limited use after one day, full reconstruction after one week. A trailer on Steenberg flooded. Damages estimated at \$75,000.
3/14/17	DR 4322 Snow	Yes	A Nor'easter moved up the eastern US coast on March 13th to late on the 14th. Heavy snow spread across parts of central New York and Pennsylvania late on March 13th. By late evening on the 14th snowfall amounts range from 8 to 33 inches of snow. After the strong area of low pressure moved northeast, lake effect snow bands formed producing more snow across the area on March 15, 2017. Although the County was impacted, the Town did not report damages.
7/23/17	N/A Flash Flood	No	Rapid rises of area streams and creeks resulted in severe flash flooding for the Nichols, NY (\$284K in damages) and Vestal, NY areas. In Barton, Middle Road cross pipe washed out. 4' culvert (\$20k replaced with a 5' pipe. ).

**Notes:**

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

## 9.2.4 Hazard Vulnerabilities and Ranking

The hazard profiles in Section 5.0 of this plan have detailed information regarding each plan participant's vulnerability to the identified hazards. This section provides a summary of exposure and impacts from significant hazards of concern as identified by the Town of Barton. For additional vulnerability information relevant to this jurisdiction, refer to Section 5.0.

### Hazard Risk Ranking

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

As discussed in Section 5.3 (Hazard Ranking), each participating town or village may have differing degrees of risk exposure and vulnerability compared to Tioga County as a whole. Therefore, each municipality ranked the degree of risk to each hazard as it pertains to their community. The table below summarizes the hazard risk/vulnerability rankings of potential natural hazards for the Town of Barton. The Town of Barton has reviewed the County hazard risk/vulnerability risk ranking table as well as its individual results to reflect the relative risk of the hazards of concern to the community. During the review of the hazard/vulnerability ranking, the community indicated Flood and Severe Winter Storm as its highest hazards of concern.

**Table 9.2-2. Hazard Risk/Vulnerability Risk Ranking**

Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard <sup>a, b, c</sup>		Probability of Occurrence	Hazard Ranking
Drought	Damage estimate not available		Frequent	Medium
Flood	RCV Exposed to 1% Annual Chance Flood Event	\$42,787,000	Frequent	High
Severe Storm	100-year MRP	\$0	Frequent	Medium
	500-year MRP	\$11,644		
Severe Winter Weather	1% GBS	\$3,505,530	Frequent	High
	5% GBS	\$17,527,650		

Notes:

- a. Building damage ratio estimates based on FEMA 386-2 (August 2001)
- c. Loss estimates for the severe storm and severe winter storm hazards are structural values only and do not include the value of contents.
- d. Loss estimates for the flood hazard represents both structure and contents.

### National Flood Insurance Program (NFIP) Summary

The following table summarizes the NFIP statistics for the Town of Barton.

**Table 9.2-3. NFIP Summary**

Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 100-year Boundary (3)
Barton (T)	21	74	\$1,233,887.00	6	2	16

Source: FEMA 2018

1. Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA and are current as of February 28, 2018 and are summarized by Community Name. Please note the total number of repetitive loss properties excludes the severe repetitive loss properties. The number of claims represents claims closed by 2/28/2018. Total building and content losses from the claims file provided by FEMA Region 2.
2. Total building and content losses from the claims file provided by FEMA Region 2.

### Critical Facilities Flood Risk

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

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

**Table 9.2-4. Potential Flood Losses to Critical Facilities**

Name	Type	Exposure		Potential Loss from 1% Flood Event		Addressed by Proposed Action
		1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	
Lockwood	EOC and Fire	X	X	-	-	T. Barton-4

Source: Tioga County GIS, FEMA 2012, and Hazus 4.2

## Identified Issues

The municipality has identified the following vulnerabilities within their community:

- Streambank erosion – Dry Brook Creek (passes through dense housing area)
- Lockwood – Cayuta Creek erosion (going to work with Soil and Water to evaluate)
- Cannon Hole area (Susquehanna River) – Buyout locations

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

- Ayres Road, Old Barton Road, several spots on 17c from the Tioga to Nichols exits, Halsey Valley Road, Glen Mary Drive between Waverly Road and Talcott street, and Route 17 C between TJs market and Notch Hill.

## 9.2.5 Capability Assessment

This section identifies the following capabilities of the local jurisdiction:

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

## Planning and Regulatory Capability

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

**Table 9.2-5. Planning and Regulatory Tools**

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
<b>Planning Capability</b>				
Master Plan	Yes, 2001	Local	Planning Board	Master Plan
Capital Improvements Plan	Yes	Local	Water/Sewer Board	Water & Sewer Plan
Floodplain Management / Basin Plan	Yes, 2012	Local	Town Board	FEMA Flood Damage Reg.



Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
Stormwater Management Plan	Yes, 2015	County	County Planning/Town of Owego	Tioga County / Town of Owego 2015 – 2020 Stormwater Management Plan
Open Space Plan	No	-	-	-
Stream Corridor Management Plan	No	-	-	-
Watershed Management or Protection Plan	No	-	-	-
Economic Development Plan	Yes	County	Economic Development and Planning Department	Tioga County 2020 Strategic Plan
Comprehensive Emergency Management Plan	Yes	County	County Emergency Services	Comprehensive Emergency Management Plan
Emergency Operation Plan	Yes	County	County Emergency Services	Emergency Operation Plan
Post-Disaster Recovery Plan	No	-	-	-
Transportation Plan	No	-	-	-
Strategic Recovery Planning Report	No	-	-	-
Other Plans:	No	-	-	-
<b>Regulatory Capability</b>				
Building Code	Yes	State & Local	CEO	Building Code of New York State
Zoning Ordinance	No	-	-	-
Subdivision Ordinance	Yes	Local	CEO	Chapter 125 – Subdivision of Land (residential only)
NFIP Flood Damage Prevention Ordinance	Yes	Federal, State, Local	CEO	Chapter 83 – Flood Damage Prevention
NFIP: Cumulative Substantial Damages	No	-	-	-
NFIP: Freeboard	Yes	State, Local	CEO	State mandated BFE+2, both residential and non-residential
Growth Management Ordinances	No	-	-	-
Site Plan Review Requirements	Yes	Local	Town Planning Board	Chapter 43 – Planning Board Chapter 117 – Site Plan Review
Stormwater Management Ordinance	No	-	-	-
Municipal Separate Storm Sewer System (MS4)	No	-	-	-
Natural Hazard Ordinance	No	-	-	-
Post-Disaster Recovery Ordinance	No	-	-	-

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
Real Estate Disclosure Requirement	Yes	State	NYS Department of State, Real Estate Agent	NYS mandate, Property Condition Disclosure Act, NY Code - Article 14 §460-467
Other (Special Purpose Ordinances [i.e., sensitive areas, steep slope])	Yes	Local	Town Planning Board	Chapter 139 – Wastewater Collection System Chapter 141 – Wastewater Management

### Administrative and Technical Capability

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

**Table 9.2-6. Administrative and Technical Capabilities**

Resources	Is this in place? (Yes or No)	Department/ Agency/Position
<b>Administrative Capability</b>		
Planning Board	Yes	Planning Board
Mitigation Planning Committee	Yes	County Level
Environmental Board/Commission	No	-
Open Space Board/Committee	No	-
Economic Development Commission/Committee	No	-
Maintenance Programs to Reduce Risk	No	-
Mutual Aid Agreements	Yes	County, Town, Chemung County
<b>Technical/Staffing Capability</b>		
Planner(s) or engineer(s) with knowledge of land development and land management practices	No	-
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	No	-
Planners or engineers with an understanding of natural hazards	No	-
NFIP Floodplain Administrator (FPA)	Yes	Code Enforcement Officer
Surveyor(s)	No	-
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	Yes	County Level
Scientist familiar with natural hazards	Yes	Tioga County Soil and Water Conservation District
Emergency Manager	Yes	County Level
Grant writer(s)	Yes	County Level
Staff with expertise or training in benefit/cost analysis	No	-
Professionals trained in conducting damage assessments	Yes	Code Enforcement Officer

### Fiscal Capability

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

**Table 9.2-7. Fiscal Capabilities**

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

### Community Classifications

The table below summarizes classifications for community program available to the Town of Barton.

**Table 9.2-8. Community Classifications**

Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	4 - 1 & 2 Family 4 – All Other	9/25/16
Public Protection (ISO Fire Protection Classes 1 to 10)	No	-	-
NYSDEC Climate Smart Community	No	-	-
Storm Ready Certification	Yes	County Level	-
Firewise Communities classification	No	-	-
Natural disaster/safety programs in/for schools	No	-	-
Organizations with mitigation focus (advocacy group, non-government)	No	-	-
Public education program/outreach (through website, social media)	No	-	-
Public-private partnership initiatives addressing disaster-related issues	Yes	County	-

Note:

N/A Not applicable  
 NP Not participating  
 - Unavailable

The classifications listed above relate to the community's ability to provide effective services to lessen its vulnerability to the hazards identified. These classifications can be viewed as a gauge of the community's capabilities in all phases of emergency management (preparedness, response, recovery and mitigation) and are

used as an underwriting parameter for determining the costs of various forms of insurance. The CRS class applies to flood insurance while the BCEGS and Public Protection classifications apply to standard property insurance. CRS classifications range on a scale of 1 to 10 with class 1 being the best possible classification, and class 10 representing no classification benefit. Firewise classifications include a higher classification when the subject property is located beyond 1000 feet of a creditable fire hydrant and is within 5 road miles of a recognized Fire Station.

Criteria for classification credits are outlined in the following documents:

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

### Self-Assessment of Capability

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

**Table 9.2-9. Self-Assessment Capability for the Municipality**

Area	Degree of Hazard Mitigation Capability		
	Limited (If limited, what are your obstacles?)*	Moderate	High
Planning and regulatory capability	X No planning or zoning. Only site plan review.		
Administrative and technical capability	X All staff is part-time.		
Fiscal capability			X
Community political capability	X Private property rights reign supreme.		
Community resiliency capability	X Lack of support for Building Code safety, hospital improvements, etc. Lack of support for community investment.		
Capability to integrate mitigation into municipal processes and activities	X All staff is part-time.		

### National Flood Insurance Program

#### NFIP Floodplain Administrator (FPA)

Chris Robinson, Code Enforcement.



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### **Flood Vulnerability Summary**

The municipality maintains lists/inventories of properties that have been flood damaged. This inventory identifies property owners who are interested mitigation (e.g. elevation, acquisition) as well as mitigation that has been completed for the flood of 2006 and 2011. The FPA noted 28 residential structures that have been damaged during flooding events. The FPA makes substantial damage estimates and stated the 28 structures that were damaged during flooding events were substantially damaged but have all been mitigated. The FPA did not identify any other property owners interested in mitigation. Mitigation funding sources have included grant funding, FEMA, and NYS. Nineteen houses have been acquired and demolished since during the 2013 plan performance period. One structure contemplated acquisition but opted out. Two houses were elevated. In addition the town is considering the adoption of a higher regulatory standard regarding freeboard, to require a 4 foot freeboard for new construction per their flood damage prevention ordinance.

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### **Resources**

The FPA is responsible for floodplain administration along with additional staff including the Highway Superintendent and Code Enforcement. The FPA stated that NFIP administration services or functions include review of all flood plains, permits, performing inspections, damage assessments, record keeping, outreach, pamphlets, and answering questions. The FPA stated that the Town provides education and outreach to the community regarding flood hazards/risk or flood risk reduction through NFIP insurance, mitigation, etc. via pamphlets. The FPA stated that finances create a barrier to running an effective floodplain management program. The FPA stated that they do not feel adequately supported and trained to fulfill their responsibilities as the municipal floodplain administrator due to lack of training. The FPA would consider attending continuing education and/or certification training on floodplain management if it were offered in the County for all local floodplain administrators.

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### **Compliance History**

The community is in good-standing in the NFIP. The most recent Community Assistance Visit (CAV) was conducted on October 25, 2011. The Town works to maintain compliance with and good-standing in the NFIP including adoption and enforcement of floodplain management requirements (e.g. regulating all new and substantially improved construction in Special Hazard Flood Areas), floodplain identification and mapping, and flood insurance outreach to the community.

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### **Regulatory**

The FPA stated that floodplain management regulations/ordinances meet the FEMA and State minimum requirements. The Town archives elevation certificates. The FPA would like to have the freeboard changed from 2 feet to 4 feet in order to support floodplain management. The Town has considered joining the Community Rating System in the past and would be interested in attending a seminar on the program if it were offered locally.

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### **Integration of Hazard Mitigation into Existing and Future Planning Mechanisms**

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



## **Planning**

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**Comprehensive Plan:** The Town of Barton has a Comprehensive Plan which needs to be updated to refer to areas of natural hazard risk (e.g. flood-prone areas, steep slopes) or refer to the Countywide Hazard Mitigation Plan.

**Tioga County Hazard Mitigation Plan:** The Town of Barton supports the implementation, monitoring, maintenance, and updating of this Plan.

**Site Plan Review:** The County planning board provides 239 site plan review to ensure compliance with the community flood damage prevention ordinance and floodplain development permitting.

**Comprehensive Emergency Management Plan:** The Town of Barton has a Comprehensive Emergency Management Plan. The Plan refers to the Hazard Mitigation plan. The Town completes ongoing updates to the plan.

**Continuity of Operations/Continuity of Government (COOP/COG):** The Town of Barton has a Continuity of Operations plan that is used to protect the local government and operations from natural hazard disruptions.

Other plans include an Economic Development Plan (County) and Stream Corridor Management Plan (Tioga County Soil and Water).

**Flood preparedness Plans:** The Town of Barton has a plan on file for use during emergency situations. At the time of an emergency, the supervisor of the town has authority to use any or all of the town resources to cope with the disaster. If and when the supervisor decides that town resources are inadequate to deal with the disaster, he/she may request assistance from the chairperson of the Tioga County Legislature who will then instruct the County Emergency Management Office to commit any or all of the county resources to assist the town.

In a disaster event, all town officials and departments shall continue normal operations of possible. Presently, the town Hall is the site of the town command center during an emergency.

The town plan must address notifying critical facilities concerning disaster situations. Maintaining power to critical facilities must be addressed. A list of industries that need to be notified must be established. A method of notifying residents outside of Greater Valley areas needs to be established. Addressing these issues will facilitate efficient emergency operations.

**Town Officers Roles and Responsibilities:** The following information was documented in the Town of Barton Floodplain Management Plan.

Town staff members have various duties during an emergency. The Town Attorney has the responsibility of advising the supervisor on a broad range of legal matters and concerns.

The Town Constable will coordinate with the Tioga County Sheriff. He will be responsible for maintaining law and order. He will protect lives and property, regulate and control traffic, and direct the injured, sick and homeless to facilities established by the Red Cross.

The Town Highway Department will request engineering assistance from the County Engineer during emergency periods if needed\_

The Waverly Barton Fire District will coordinate with the County Fire Coordinator on any and all necessary actions on behalf of the town.



The Town Planning Board and other existing agencies of the town will be subject to the Town Supervisor's request for assistance.

### **Regulatory and Enforcement (Ordinances)**

The municipal codes are available online at: <https://ecode360.com/BA1404>

**Zoning, Subdivision, and Site Plan Review:** The Town of Barton's municipal zoning and subdivision regulations and site plan review ordinance (Chapter 125 [Subdivision of Land] and Chapter 117 [Site Plan Review] of the municipal Code) consider natural hazard risk (e.g. the presence of floodplains, steep slopes, etc.) and require developers to take additional actions to mitigate natural hazard risk (e.g. undergrounding utilities, stormwater detention, creating easements in areas/zones of hazard risk).

The Floodplain Manager, County Planning, and NYSDEC provide resources to the Planning Board and/or ZBA to guide their decisions with respect to natural hazard risk management.

**Flood Damage Prevention Ordinance:** The Town of Barton's NFIP Flood Damage Protection Ordinance (Chapter 83 of the municipal Code) meets the minimum Federal and State NFIP regulatory requirements. The FPA stated that the Town is considering raising the Freeboard from 2' to 4' which would exceed Federal and State requirements.

### **Operational and Administration**

**Mutual Aid Agreements:** The Town works to establish agreements with entities that can provide support with FEMA/SOEM paperwork after disasters; qualified damage assessment personnel, improved post-disaster capabilities, FEMA/SOEM paperwork compilation, submissions, and record-keeping.

**Damage Assessments:** The Town works with regional agencies (i.e. County and SOEM) to help develop damage assessment capabilities at the local level through such things as training programs, certification of qualified individuals (e.g. code officials, floodplain managers, engineers). The Town works to identify and develop agreements with entities that can provide support with FEMA/SOEM paperwork after disasters; qualified damage assessment personnel – improve post-disaster capabilities – damage assessment; FEMA/SOEM paperwork compilation, submissions, record-keeping.

**Inventories, Datasets, and Vulnerability Assessments:** The Town participates in local, county and/or state level projects and programs to develop improved structure and facility inventories and hazard datasets to support enhanced risk assessment efforts. Such programs may include developing a detailed inventory of critical facilities based upon FEMA's Comprehensive Data Management System (CDMS) which could be used for various planning and emergency management purposes including supporting the performance of enhanced risk and vulnerability assessments for hazards of concern and supporting state, county and local planning efforts including mitigation (including updates to the State HMP), comprehensive emergency management, debris management, and land use.

The Stormwater Management functions of the Town are carried out by the Code Enforcement Officer. NFIP Floodplain Management functions in the Town are carried out by the Town Board and Highway Superintendent. The Town of Barton does not have a municipal planner or contract planning firm but requires the owner to supply engineering plans and the Town has a Planning Board or Zoning Board.

The Town Board and Highway Superintendent undergo functions with respect to managing natural hazard risk. The Town does have staff or contract with firms that have experience with developing Benefit-Cost Analysis. Substantial Damage Estimates are performed by the Code Enforcement Officer. Town staff and contracted firms have experience in preparing grant applications for mitigation projects. Town staff receive trainings or



continuing professional education which supports natural hazard risk reduction and the FPA noted that any training is welcome. The FPA indicated that the Town does not have other hazard management programs in place.

In addition to support reduction of flood impacts, per the Town Floodplain Management Plan (no date), the Town of Barton road crew performs the following:

- (1) Cleaning streams above and below our bridges.
- (2) Keep culverts, ditches and other drain systems open and cleaned.
- (3) Installs rip rap to prevent erosion.
- (4) Installs larger drain systems where and when needed.

According to the FPA, Town staff have job descriptions that specifically include identifying and/or implementing mitigation projects/actions or other efforts to reduce natural hazard risk. Staff and Departments also participate in associations, organizations, groups or other committees that support natural hazard risk reduction and build hazard management capabilities.

### **Funding**

The Town of Barton's municipal/operating budget includes line items for mitigation projects/activities. The Town has a Capital Improvements Budget that includes budget for mitigation related projects. The Town has pursued grant funds for mitigation-related projects including Project #4020-0054 – 1, 445, 860 (no local match) and the Foster Road Rip Rap Project 68, 2c31-3-0013 (\$564,986, no local funds). The Town does not have any other mechanisms to fiscally support hazard mitigation projects.

### **Education and Outreach**

The Town uses radio, newspapers, TV, and digital announcement signs to inform citizens on natural hazards (e.g. safe use of generators, emergency preparedness, flood hazard information). The Town provides and maintains links to the HMP website, and regularly posts notices referencing the HMP webpages. The Town works with neighborhood associations, civic and business groups to disseminate information on flood insurance and the availability of mitigation grant funding

Per the Town Floodplain Management Plan, residents in flood prone areas will be educated on flood issues. Pamphlets that outline the flood warning system, what radio station or television station to turn to for flood information, how much time is available prior to flood events, how and when to evacuate or move property to high areas whether in the house or off property, will increase knowledge concerning flood events. Residents will be educated as to the benefits of flood insurance.

### **Sheltering, Evacuation, and Temporary Housing**

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

Tioga County, through a buildable land analysis, has identified areas suitable for placing temporary and permanent housing. Refer to Section 4.7.5 in Section 4 (County Profile) of Volume 1 of this plan for a description of resources identified by the county to support municipalities with the identification of evacuation, sheltering, and temporary and permanent housing. Each year, during the annual HMP progress meeting, the municipality will discuss their progress in identifying shelters, evacuation routes, and temporary and permanent housing for their community.



### Temporary Housing

The Town of Barton identified Maple Lane Trailer Court on Route 17C as temporary housing for residents displaced by disaster. The Trailer Court is compliant with building codes and can house additional trailers if lots are vacant. The Town identified Wilcox Estates as a potential site suitable for relocating houses of the floodplain and/or building new homes once properties in the floodplain are acquired. Houses are available to purchase.

### Evacuation and Sheltering Needs

The Town of Barton has identified Waverly High School and the Municipal Building as designated emergency shelters. Waverly High School has a 300+ capacity and a backup generator. The Municipal and Fire Department Building doesn't have cooking facilities, but has a backup generator and is ADA compliant. The Town currently does not have any pet sheltering.

Procedures in place for sheltering include the notification of the County Emergency Management Plan Coordinator, the Town Supervisor, and the Red Cross. During an evacuation situation, the Town Supervisor contacts the County Emergency Management Plan Coordinator and decide on evacuation routes.

## 9.2.6 Mitigation Strategy and Prioritization

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

### Past Mitigation Initiative Status

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

**Table 9.2-10. Status of Previous Mitigation Actions**

Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, or No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.	
1	Cayuta Creek – streambank erosion and gravel deposition are primary concerns. Streambank erosion mitigation needed north and south of Main Street in Lockwood. Recommendation: Have area evaluated by SWCD for preliminary design ideas	Flood	Streambank erosion and gravel deposition are primary concerns of Cayuta Creek in the Town. Streambank erosion mitigation is needed north and south of Main Street in Lockwood.	Highway Dept with support from SWCD	No Progress	Cost	-	1.	Include in the 2018 HMP Update
						Level of Protection	-	2.	Conduct an inventory and evaluation on this reach of Cayuta Creek to identify solutions and projects. Once inventory and evaluation are completed, projects will be prioritized.
						Damages Avoided; Evidence of Success	-	3.	-
2	Canon Hole Area – apply for 20 homes to be bought out.	Flood	Homes in the Canon Hole area were susceptible to flooding and experienced frequent flood damages, impacting the life and safety of the homeowners.	Town Supervisor	Complete	Cost	\$1.5 million	1.	Discontinue
						Level of Protection	500-year flood	2.	-
						Damages Avoided; Evidence of Success	Homes have been acquired and no longer susceptible to flood damages.	3.	19 of the 20 homes were acquired between 2013 and 2016. One home opted out of being acquired.
3	Mitigate Bridge on Barton Road to improve access to area by school buses, trucks, emergency responders	Flood	There was not access to an area with over 20 properties when river begins to flood at a low spot in the road.	Town Board and Public Works	Complete	Cost	\$195,000	1.	Discontinue
						Level of Protection	500+ year	2.	-
						Damages Avoided; Evidence of Success	Now there is vehicular access with no weight limit.	3.	A new bridge has been installed.
4	Norris Drive Stormwater Project. Install diversion ditch	Flood	Flooding due to lack of drainage on	Town Supervisor and Highway Dept.	No Progress – SWCD applied for	Cost	-	1.	Include in 2018 HMP Update
						Level of Protection	-	2.	Norris Drive Stormwater Project - Install diversion ditch





Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, or No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.	
	to eliminate flooding to surrounding properties		properties including driveways and surrounding homes.	with support from SWCD	EQIP but funding was not received			1.	to eliminate flooding to surrounding properties
						Damages Avoided; Evidence of Success	-	3.	-
5	Foster Road over Ellis Creek Culvert mitigation. Current culvert pipe is not correct size need to mitigate to hydrologic analysis	Flood	Current culvert pipe is not correct size need to mitigate to hydrologic analysis. Funding was applied for in 2011; however, FEMA denied replacing the culvert but did provide funding for a repair.	Town Highway Dept. and County SWCD	In progress	Cost	-	1.	Include in 2018 HMP Update
						Level of Protection	-	2.	Foster Road over Ellis Creek Culvert mitigation – replace existing culvert pipe with larger pipe.
						Damages Avoided; Evidence of Success	-	3.	-
6	Foster Road Streambank Stabilization Project	Flood	Streambank was washing out and threatening road and three homes.	Town Board and County SWCD	Complete	Cost	\$190,225	1.	Discontinue
						Level of Protection	unknown	2.	-
						Damages Avoided; Evidence of Success	Avoided undermining of road and houses.	3.	The project was completed in 2014; therefore, it will not be included in the 2018 HMP Update.
7	<p>Purchase, or relocate structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority.</p> <p>Phase 1: Identify appropriate candidates for relocation based on cost-effectiveness versus retrofitting. Evaluate options to reduce flood vulnerability of the Lockwood EOC and the Town Highway Barn.</p> <p>Phase 2: Where relocation is determined to be a viable option, work with property owners toward implementation of that action based on available funding from FEMA and local match availability.</p>								
	See above	Flood and Severe Storm	There are repetitive and severe repetitive properties that need to be addressed.	Town FPA with support from NYS DHSES and FEMA	No Progress	Cost	-	1.	Include in the 2018 HMP Update
						Level of Protection	-	2.	Refer to Actions Town of Barton-4 and Town of Barton-6
						Damages Avoided;	-	3.	-



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, or No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.	
						Evidence of Success			
8	Maintain compliance with and good-standing in the NFIP including adoption and enforcement of floodplain management requirements (e.g. regulating all new and substantially improved construction in Special Hazard Flood Areas), floodplain identification and mapping, and flood insurance outreach to the community.								
	Further, continue to meet and/or exceed the minimum NFIP standards and criteria through the following NFIP-related continued compliance actions identified as Initiatives 9 – 15 (below).								
	See above	Flood and Severe Storm	-	Town Engineer and FPA with support from NYS DHSES, ISO and FEMA	Ongoing Capability	Cost	-	1.	Ongoing Capability - Removed from Project List
						Level of Protection	-	2.	-
Damages Avoided; Evidence of Success						-	3.	-	
9	Conduct and facilitate community and public education and outreach for residents and businesses to include, but not be limited to, the following to promote and effect natural hazard risk reduction: <ul style="list-style-type: none"><li>• Provide and maintain links to the HMP website, and regularly post notices on the County/municipal homepage(s) referencing the HMP webpages.</li><li>• Prepare and distribute informational letters to flood vulnerable property owners and neighborhood associations, explaining the availability of mitigation grant funding to mitigate their properties, and instructing them on how they can learn more and implement mitigation.</li><li>• Use email notification systems and newsletters to better educate the public on flood insurance, the availability of mitigation grant funding, and personal natural hazard risk reduction measures.</li><li>• Work with neighborhood associations, civic and business groups to disseminate information on flood insurance and the availability of mitigation grant funding.</li></ul>								
	See Above	All	-	Town Planning Board with support from NYS DHSES and FEMA	Ongoing Capability	Cost	-	1.	Ongoing Capability - Removed from Project List
						Level of Protection	-	2.	-
						Damages Avoided; Evidence of Success	-	3.	-
10	Archive elevation certificates	Flood, Severe Storm	-	Town FPA	Ongoing Capability	Cost	-	1.	Ongoing Capability - Removed from Project List
						Level of Protection	-	2.	-
						Damages Avoided; Evidence of Success	-	3.	-
11	Continue to support the implementation, monitoring,	All	-	Town Planning Board	Ongoing Capability	Cost	-	1.	Ongoing Capability - Removed from Project List





Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, or No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.	
	maintenance, and updating of this Plan, as defined in Section 7.0					Level of Protection	-	2.	-
						Damages Avoided; Evidence of Success	-	3.	-
						Cost	-	1.	Ongoing Capability - Removed from Project List
12	Complete ongoing updates of Comprehensive Emergency Management Plans	All	-	Town Planning Board	Ongoing Capability	Level of Protection	-	2.	-
						Damages Avoided; Evidence of Success	-	3.	-
						Cost	-	1.	Ongoing Capability - Removed from Project List
13	Create/enhance/ maintain mutual aid agreements with neighboring communities for continuity of operations.	All	-	Town Planning Board with support from surrounding municipalities	Ongoing Capability	Level of Protection	-	2.	-
						Damages Avoided; Evidence of Success	-	3.	-
						Cost	-	1.	Ongoing Capability - Removed from Project List
14	Identify and develop agreements with entities that can provide support with FEMA/SOEM paperwork after disasters; qualified damage assessment personnel – Improve post-disaster capabilities – damage assessment; FEMA/SOEM paperwork compilation, submissions, record-keeping	All	-	Town Board with support from Tioga County, NYS DHSES, and FEMA	Ongoing Capability	Level of Protection	-	2.	-
						Damages Avoided; Evidence of Success	-	3.	-
						Cost	-	1.	Ongoing Capability - Removed from Project List
15	Work with regional agencies (i.e. County and SOEM) to help develop damage assessment capabilities at the local level through such things as training programs, certification of qualified individuals (e.g. code officials,	All Hazards	-	Municipality with support from County, NYSOEM	Ongoing Capability	Level of Protection	-	2.	-
						Damages Avoided; Evidence of Success	-	3.	-
						Cost	-	1.	Ongoing Capability - Removed from Project List

Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, or No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.	
	floodplain managers, engineers).								
	<p>Participate in local, county and/or state level projects and programs to develop improved structure and facility inventories and hazard datasets to support enhanced risk assessment efforts. Such programs may include developing a detailed inventory of critical facilities based upon FEMA's Comprehensive Data Management System (CDMS) which could be used for various planning and emergency management purposes including:</p> <ul style="list-style-type: none"> <li>• Support the performance of enhanced risk and vulnerability assessments for hazards of concern.</li> <li>• Support state, county and local planning efforts including mitigation (including updates to the State HMP), comprehensive emergency management, debris management, and land use.</li> <li>• Improved structural and facility inventories could incorporate flood, wind and seismic-specific parameters (e.g. first floor elevations, roof types, structure types based on FEMA-154 "Rapid Visual Screening of Buildings for Potential Seismic Hazards" methodologies). It is recognized that these programs will need to be initiated and supported at the County and/or State level, and will require training, tools and funding provided at the county, state and/or federal level.</li> </ul>								
	See above	All Hazards	-	Town HMP Coordinator	Ongoing Capability	Cost	-	1.	Ongoing Capability - Removed from Project List
						Level of Protection	-	2.	-
						Damages Avoided; Evidence of Success	-	3.	-



### Completed Mitigation Initiatives not Identified in the Previous Mitigation Strategy

The Town of Barton has performed ongoing maintenance projects to reduce the impact of flooding but has not identified specific mitigation projects/activities that have been completed but were not identified in the previous mitigation strategy in the 2013 Plan.

### Proposed Hazard Mitigation Initiatives for the Plan Update


The Town of Barton participated in a mitigation action workshop on July 11, 2018 and was provided the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 ‘Selecting Appropriate Mitigation Measures for Floodprone Structures’ (March 2007) and FEMA ‘Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards’ (January 2013).

Table 9.2-11 summarizes the comprehensive-range of specific mitigation initiatives the Village of Spencer would like to pursue in the future to reduce the effects of hazards. Some of these initiatives may be previous actions carried forward for this plan update. These initiatives are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. The four FEMA mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

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

Table 9.2-12 provides a summary of the prioritization of all proposed mitigation initiatives for the Plan update.

**Table 9.2-11. Proposed Hazard Mitigation Initiatives**

Project Number	Project Name	Description of Problem	Description of Solution	Critical Facility (Yes / No)	Hazard(s) Mitigated	Goals Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Potential Funding Sources	Timeline	Priority	Mitigation Category
T. Barton-1 (Previous Action)	Inventory and evaluation of streambank on the Cayuta Creek	Streambank erosion and gravel deposition are primary concerns of Cayuta Creek in the Town. Streambank erosion mitigation is needed north and south of Main Street in Lockwood.	Conduct an inventory and evaluation on this reach of Cayuta Creek to identify solutions and projects. Once inventory and evaluation are completed, projects will be prioritized.	No	Flood, Severe Storm	1-1, 4-1, 4-4	Highway Dept. with support from SWCD	High	Medium	Water Quality Improvement Project (WQIP) Program (through NYS DEC); municipal budget	Within 1 year of received grant funding	High	NSP
T. Barton-2 (Previous Action #5)	Foster Road over Ellis Creek Culvert mitigation	In 2011, FEMA provided funding to perform a temporary solution to the culvert. However, a more permanent solution needs to be done.	Replace existing culvert pipe with larger pipe.	No	Flood, Severe Storm	1-1, 1-2	Town Highway Dept. and County SWCD	High	High	FEMA HMGP; municipal budget	Between 1 and 5 years	High	SIP
T. Barton-3 (Previous Action #4)	Norris Drive Stormwater Project	Properties flood in the area of Norris Drive when stormwater system becomes overwhelmed.	Install diversion ditch to eliminate flooding to surrounding properties	No	Flood, Severe Storm	1-1, 1-2	Town Supervisor and Highway Dept. with support from SWCD	Medium	Medium	FEMA HMGP; municipal budget	Between 1 and 5 years	High	SIP
T. Barton-4	Lockwood Fire Department-Critical Facility Mitigation	It is unclear if the fire department is located in the regulatory floodplain.	Implement local flood analysis to determine if Lockwood Fire Department is	Yes 	Flood	1-2, 1-9, 3-2	Fire Department supported by Town Board	High	Low for outreach	Municipal Time	Between 1 and 5 years	High	EAP



## SECTION 9.2: TOWN OF BARTON

Project Number	Project Name	Description of Problem	Description of Solution	Critical Facility (Yes / No)	Hazard(s) Mitigated	Goals Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Potential Funding Sources	Timeline	Priority	Mitigation Category
			in the floodplain and if LOMA is required.										
T. Barton-5	Advise RL and SRL property owners annually to inform location in floodplain and provide activities to reduce flood impacts and not requirements for any development in the floodplain.	Property owners need guidance on good floodplain management practices.	Provide clear outreach materials to inform the residents on ways to reduce flood impacts.	No	Flood	1-2, 2-1, 2-2,	Town Floodplain Administrator	High	Low	Municipal Time	One year	High	EAP
T. Barton-6	Schedule a meeting for RL, SRL homeowners in Old Barton Road Area to inform of potential grant funding for acquisition to address issues.	Property owners need support for acquisition funding.	Provide outreach and identify willing grant participants	No	Flood	1-2, 2-1, 2-2,	Town Floodplain Administrator	High	Low	Municipal Time	One year	High	EAP
T. Barton-7	Review RL, SRL list to insure accuracy and update if necessary.	FEMA RL, SRL list may not have most recent documentation	Schedule a meeting with FEMA/ISO to review the list for correctness	No	Flood	1-2, 2-1, 2-2,	Town Floodplain Administrator	High	Low	Municipal Time	One year	High	EAP

### Notes:

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

#### Acronyms and Abbreviations:

CAV	Community Assistance Visit
CRS	Community Rating System
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
FPA	Floodplain Administrator
HMA	Hazard Mitigation Assistance
N/A	Not applicable
NFIP	National Flood Insurance Program

#### Potential FEMA HMA Funding Sources:

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

#### Timeline:

The time required to complete the project

#### Cost:

Estimated costs associated with implementation

#### Benefits:

The benefits that implementation of this project will provide.





OEM Office of Emergency Management

Mitigation Category:

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

Critical Facility:


- Yes  - Critical Facility located in 1% floodplain



Table 9.2-12. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community	Total	High / Medium / Low
T. Barton-1 (Previous Action)	Inventory and evaluation of streambank on the Cayuta Creek	1	1	1	1	0	1	0	1	1	0	1	1	1	0	10	High
T. Barton-2 (Previous Action #5)	Foster Road over Ellis Creek Culvert mitigation	1	1	1	1	1	1	0	1	1	0	1	1	0	0	10	High
T. Barton-3 (Previous Action #4)	Norris Drive Stormwater Project	1	1	1	1	1	1	0	1	1	0	1	1	0	0	10	High
T. Barton-4	Lockwood Fire Department-Critical Facility Mitigation	1	1	0	1	1	1	0	0	0	1	1	1	1	0	10	High
T. Barton-5	Advise RL and SRL property owners annually to inform location in floodplain and provide activities to reduce flood impacts and not requirements for any development in the floodplain.	1	1	1	1	1	1	0	0	0	1	0	1	1	0	9	High
T. Barton-6	Schedule a meeting for RL, SRL homeowners in Old Barton Road Area to inform of potential grant funding for acquisition to address issues.	1	1	1	1	1	0	1	0	0	1	0	1	1	0	9	High
T. Barton-7	Review RL, SRL list to insure accuracy and update if necessary.	1	1	1	1	1	0	1	0	0	1	0	1	1	0	9	High

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



### **9.2.7 Future Needs To Better Understand Risk/Vulnerability**

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None at this time.

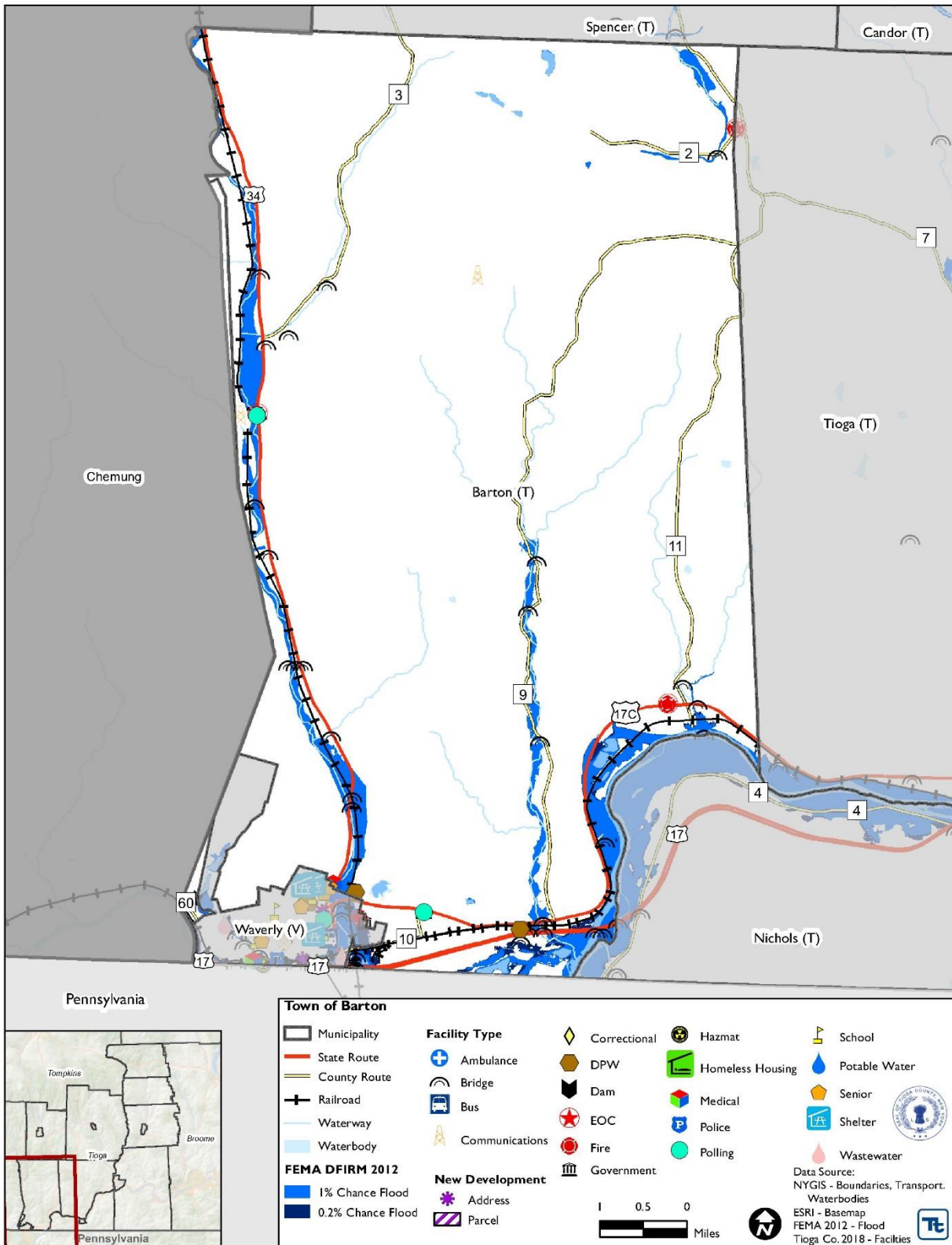
### **9.2.8 Hazard Area Extent and Location**

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Hazard area extent and location maps have been generated for the Town of Barton that illustrate the probable areas impacted within the municipality. These maps are based on the best available data at the time of the preparation of this plan, and are considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the Town of Barton has significant exposure. These maps are illustrated in the hazard profiles within Section 5.4, Volume I of this Plan. A map of the Town of Barton Hazard Area Extent and Location is provided on the following page. This map indicates the location of the regulatory floodplain as well as identified critical facilities within the municipality.



Figure 9.2-1. Town of Barton Hazard Area Extent and Location





Town of Barton Action Worksheet			
<b>Project Name:</b>	Cayuta Creek Streambank Mitigation		
<b>Project Number:</b>	T. Barton - 1		
Risk / Vulnerability			
<b>Hazard(s) of Concern:</b>	Flood, Severe Storm, Erosion		
<b>Description of the Problem:</b>	Streambank erosion and gravel deposits are primary concerns of Cayuta Creek in the Town. Streambank erosion mitigation is needed north and south of Main Street in Lockwood. North and South of Main Street in Lockwood. If this is not corrected this will impact 8 houses and close main road and the railroad tracks. It will also cut off the residents from the Lockwood volunteer fire department if the Main Road is lost and the bridge across. This stream is susceptible to flash floods.		
Action or Project Intended for Implementation			
<b>Description of the Solution:</b>	Conduct an inventory and evaluation on this reach of Cayuta Creek to identify solutions and projects by County soil and Water. Once inventory and evaluation are completed, projects will be prioritized. Phase one complete study, 6 months, phase 2 complete project, 2 months. Ideally the project would be stream bank restoration.		
<b>Is this project related to a Critical Facility?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
<b>Is this project related to a Critical Facility located within the 100-year floodplain?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
<b>Level of Protection:</b>	500 year event	<b>Estimated Benefits (losses avoided):</b>	Prevent the future loss of Main Rd., 8 houses and loss of life of the residents.
<b>Useful Life:</b>	Will be determined when phase 2 is identified		
<b>Estimated Cost:</b>	\$500,000		
Plan for Implementation			
<b>Prioritization:</b>	High	<b>Desired Timeframe for Implementation:</b>	3-9 months
<b>Estimated Time Required for Project Implementation:</b>	6 months - 1 year	<b>Potential Funding Sources:</b>	FMA, HMGP, USACE
<b>Responsible Organization:</b>	Town Highway Department with support from Tioga County Soil and Water Conservation District	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	Tioga County Soil and Water
Three Alternatives Considered (including No Action)			
<b>Alternatives:</b>	<b>Action</b>	<b>Estimated Cost</b>	<b>Evaluation</b>
	No Action	\$0	Problem will continue
	Dredging	\$100,000	Not a permanent solution. Reaction by the stream, upstream and downstream. Causes direct ripples in the water
	Armoring of the bank	\$400,000	The armoring won't stay in place due to the sharp turn.
Progress Report (for plan maintenance)			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			



Town of Barton Action Worksheet		
<b>Project Name:</b>	Cayuta Creek Streambank Mitigation	
<b>Project Number:</b>	Town of Barton - 1	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
<b>Life Safety</b>	1	Should flooding occur, it will affect 8 properties and potentially isolate populations
<b>Property Protection</b>	1	Yes, this project will prevent flooding from damaging 8 properties
<b>Cost-Effectiveness</b>	1	Could prevent loss from private property, and damage to road and railroad tracks.
<b>Technical</b>	1	
<b>Political</b>	0	
<b>Legal</b>	1	
<b>Fiscal</b>	0	
<b>Environmental</b>	1	
<b>Social</b>	1	This project can prevent isolated populations
<b>Administrative</b>	0	
<b>Multi-Hazard</b>	1	Flood, Severe Storm, Erosion
<b>Timeline</b>	1	
<b>Agency Champion</b>	0	
<b>Other Community Objectives</b>	1	
<b>Total</b>	10	
<b>Priority (High/Med/Low)</b>	High	



Town of Barton Action Worksheet			
<b>Project Name:</b>	Foster Road Culvert Improvement		
<b>Project Number:</b>	T. Barton-2		
Risk / Vulnerability			
<b>Hazard(s) of Concern:</b>	Flooding, Severe Storm		
<b>Description of the Problem:</b>	The steel culvert pipe at lat. 42.048588 long -76.447529 is too small and has been damaged in the past two floods. the dimensions of the pipe are 12 ft. wide by 50 ft. long along Foster rd. and over Ellis brook. It has been pieced back together to maintain. The pipe gets overwhelmed and floods the road. A flash event of 3 inches would overwhelm the pipe. During the past 2 events where the pipe did not work it has impacted the road it has impacted a house on the road by placing water in the basement. The road had to be shut down during the two previous flooding events.		
Action or Project Intended for Implementation			
<b>Description of the Solution:</b>	Replace existing culvert pipe with 204" x 134" steel plate arch culvert, designed to increase the capacity of the system on Foster Drive. Offsite detour would be in place for construction		
<b>Is this project related to a Critical Facility?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
<b>Is this project related to a Critical Facility located within the 100-year floodplain?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
<b>Level of Protection:</b>	50 year event	<b>Estimated Benefits (losses avoided):</b>	Prevent flooding & detour of Foster Rd
<b>Useful Life:</b>	30 years		
<b>Estimated Cost:</b>	336,138		
Plan for Implementation			
<b>Prioritization:</b>	High	<b>Desired Timeframe for Implementation:</b>	1 year
<b>Estimated Time Required for Project Implementation:</b>	6 months	<b>Potential Funding Sources:</b>	Bridge NY, HMGP, PDM
<b>Responsible Organization:</b>	Town of Barton Highway Department	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	Foster pipe study
Three Alternatives Considered (including No Action)			
<b>Alternatives:</b>	<b>Action</b>	<b>Estimated Cost</b>	<b>Evaluation</b>
	No Action	\$0	No impact
	Detention pond	1-2 million	Not enough area owned by the Town to install a detention pond. Would have to relocate a house upstream from the house
	Elevate the road	400,000	More research would need to be done especially for the impact on the resident who resides on this side of Foster Rd.
Progress Report (for plan maintenance)			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			



Town of Barton Action Worksheet		
<b>Project Name:</b>	Foster Road	
<b>Project Number:</b>	T. Barton-2	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
<b>Life Safety</b>	1	
<b>Property Protection</b>	1	Will protect road from being damaged and adjacent property from being flooded
<b>Cost-Effectiveness</b>	1	Could prevent repetitive damage for the road and protects property from loss
<b>Technical</b>	1	Technical requirements can be feasibly implemented.
<b>Political</b>	1	
<b>Legal</b>	1	Road located within Town of Barton
<b>Fiscal</b>	0	
<b>Environmental</b>	1	Increased culvert capacity can prevent flood impacts on surrounding areas
<b>Social</b>	1	Will reduce potentially vulnerable populations and facilitate movement during flood events
<b>Administrative</b>	0	
<b>Multi-Hazard</b>	1	
<b>Timeline</b>	1	Project can be implemented within 5 years
<b>Agency Champion</b>	0	
<b>Other Community Objectives</b>	0	
<b>Total</b>	10	
<b>Priority (High/Med/Low)</b>	High	

## 9.3 TOWN OF BERKSHIRE

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



2010 Population: 1412  
Population in 100 year Floodplain (SFHA): 118

Land Area: 19,514 acres  
Land Area in Floodplain: 4.3%  
NFIP policies: 20  
NFIP Policies in SFHA: 17  
NFIP Claims: 4  
Total NFIP Losses: \$14,730



Number of Buildings: 628  
Total Replacement Building Value: \$143.4 million  
Number of Buildings in the SFHA: 69  
Total Replacement Building Value Exposed in the SFHA: \$13.8 million

Mitigation Focus  
Flood and Multi Hazard



### 9.3.1 Hazard Mitigation Plan Point of Contact

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

Primary Point of Contact	Alternate Point of Contact
Keith Flesher, Supervisor Cell: 607-343-3260 Email: <a href="mailto:kflesher73@gmail.com">kflesher73@gmail.com</a>	Karl Spoonhower, Highway Superintendent 607-725-1402
Floodplain Administrator	
Chris Hammond, Code Enforcement Officer 607-744-9383 <a href="mailto:berkshire.code.enforcement@gmail.com">berkshire.code.enforcement@gmail.com</a>	

### 9.3.2 Municipal Profile

The Town of Berkshire is in the northeast part of the Tioga County and is northwest of Binghamton, NY. The east town line of Berkshire is the border of Broome County, and part of the town line is the border of Tompkins County. New York State Route 38 is a north-south highway in the town.

The Town has a generally rugged topography with elevations from 1,000 to over 1,500 feet. Two principal valleys, formed by the East and West Branches of the Owego Creek, drain the area from north to south, entering the Susquehanna River in Owego. Berkshire has been referred to as “centrally isolated” - being 21 miles southeast of Ithaca, 30 miles northwest of Binghamton, 26 miles south of Cortland, and 16 miles north of the county seat in Owego. (Berkshire, 2017)

The town maintains a website containing pertinent town links and contact information, as well as a bulletin board located in front of the Town Hall. A town wide email list is maintained by a volunteer with approximately 200 email addresses. A quarterly newsletter is also published and sent to all residents (approximately 424 addresses and 166 email addresses). The fire department and Congregational Church provide bulletin boards in front of their buildings to make announcements of community events. Legal notices are listed in the official newspaper The Tioga County Courier as required by state law. (Berkshire, 2017)

Several operating family farms, mostly in dairy, comprise the agricultural sector. There are several small businesses and home-based businesses as well as many local contractors operating within the community. A wholesale hardwood lumber business is the single largest employer in the town

According to the United States Census Bureau, the town has a total area of 30.2 square miles (78 km<sup>2</sup>), of which, 30.2 square miles (78 km<sup>2</sup>) of it is land and 0.03% is water.

The Town of Berkshire is governed by a supervisor and four members. According to the 2010 Census, the community's population was 1,412.

### Growth/Development Trends

The following table summarizes recent residential/commercial development since 2012 to present and any known or anticipated major residential/commercial development and major infrastructure development that has been identified in the next five years within the municipality. Refer to the map in 9.3.8 of this annex which illustrates the hazard areas along with the location of potential new development.

**Table 9.3-1. Growth and Development**

Property or Development Name	Type (e.g. Res., Comm.)	# of Units / Structures	Location (address and/or Parcel ID)	Known Hazard Zone(s)	Description/Status of Development
<b>Recent Development from 2012 to present</b>					
None					
<b>Known or Anticipated Development in the Next Five (5) Years</b>					
Dollar General	Commercial	1	Route 38	Could not locate.	In Progress
Playground at town park/ballfield	Recreational	1	Next to town hall	Yes	In Progress

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

### 9.3.3 Natural Hazard Event History Specific to the Municipality



Tioga County has a history of natural and non-natural hazard events as detailed in Volume I, Section 5.0 of this plan. A summary of historical events is provided in each of the hazard profiles and includes a chronology of events that have affected the County and its municipalities. For the purpose of this plan update, events that have occurred in the County from 2012 to December 31, 2017 were summarized to indicate the range and impact of hazard events in the community. Information regarding specific damages is included, if available, based on reference material or local sources. This information is presented in the table below. For details of these and additional events, refer to Volume I, Section 5.0 of this plan.

**Table 9.3-2. Hazard Event History**

Dates of Event	Event Type (Disaster Declaration if applicable)	Tioga County Designated?	Summary of Damages/Losses
March 2017	Snowstorm	Yes	Snow removal; overtime

Notes:

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

### 9.3.4 Hazard Vulnerabilities and Ranking

The hazard profiles in Section 5.0 of this plan have detailed information regarding each plan participant's vulnerability to the identified hazards. This section provides a summary of exposure and impacts from significant hazards of concern as identified by the Town of Berkshire. For additional vulnerability information relevant to this jurisdiction, refer to Section 5.0.

#### Hazard Risk Ranking

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

As discussed in Section 5.3 (Hazard Ranking), each participating town or village may have differing degrees of risk exposure and vulnerability compared to Tioga County as a whole. Therefore, each municipality ranked the degree of risk to each hazard as it pertains to their community. The table below summarizes the hazard risk/vulnerability rankings of potential natural hazards for the Town of Berkshire. The Town of Berkshire has reviewed the County hazard risk/vulnerability risk ranking table as well as its individual results to reflect the relative risk of the hazards of concern to the community.

The Town believes that severe winter weather should remain high because children in the Town attend a regional school outside of the municipality. A winter weather event may impact the Town of Berkshire but not the surrounding municipalities. The Town feels severe storm is a high hazard because during periods of heavy rain, roadways in the Town experience ponding and forces road closures. Heavy rain can also wash out streambanks that leads to flooding as well. The Town of Berkshire has a history of downed trees due to strong winds that lead to road closures and utility outages.



Table 9.3-3. Hazard Risk/Vulnerability Risk Ranking

Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard <sup>a, b, c</sup>		Probability of Occurrence	Hazard Ranking
Drought	Damage estimate not available		Frequent	Medium
Flood	RCV Exposed to 1% Annual Chance Flood Event	\$34,499,000	Frequent	Medium
Severe Storm	100-year MRP	\$0	Frequent	High
	500-year MRP	\$10,577		
Severe Winter Weather	1% GBS	\$886,640	Frequent	High
	5% GBS	\$4,433,200		

Notes:

- Building damage ratio estimates based on FEMA 386-2 (August 2001)
- Loss estimates for the severe storm and severe winter storm hazards are structural values only and do not include the value of contents.
- Loss estimates for the flood hazard represents both structure and contents.

### National Flood Insurance Program (NFIP) Summary

The following table summarizes the NFIP statistics for the Town of Berkshire.

Table 9.3-4. NFIP Summary

Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 100-year Boundary (3)
Berkshire (T)	20	4	\$14,730.00	0	0	17

Source: FEMA 2018

- Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA and are current as of February 28, 2018 and are summarized by Community Name. Please note the total number of repetitive loss properties excludes the severe repetitive loss properties. The number of claims represents claims closed by 2/28/2018. Total building and content losses from the claims file provided by FEMA Region 2.
- Total building and content losses from the claims file provided by FEMA Region 2.

### Critical Facilities Flood Risk

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

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

Table 9.3-5. Potential Flood Losses to Critical Facilities

Name	Type	Exposure		Potential Loss from 1% Flood Event		Addressed by Proposed Action
		1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	
Berkshire Town Hall	Municipal Building	X	X	-	-	Town of Berkshire-3

Source: Tioga County GIS, FEMA 2012, and Hazus 4.2

## Identified Issues

The municipality has identified the following vulnerabilities within their community:

- Trees by golf course lead to power outages – town is currently working on trimming trees to prevent power outages during high wind events
- East and west portions of the town are located on top of hills – many of the town roads experienced downed trees and prevent roadways from being accessed – issue with emergency access (police, fire)
- Seasonal/limited use roads in the town can prevent emergency access as well – can't be plowed in the winter because of the type of roads (too rough, too steep)
- Regional school district – where the school is located may not be impacted by a weather event even though the town experienced snow, damages, etc.

## 9.3.5 Capability Assessment

This section identifies the following capabilities of the local jurisdiction:

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

## Planning and Regulatory Capability

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

Table 9.3-6. Planning and Regulatory Tools

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
<b>Planning Capability</b>				
Master / Comprehensive Plan	Yes	Yes	Planning Board	2017
Capital Improvements Plan	No	-	-	-



Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
Floodplain Management / Basin Plan	No	-	-	-
Stormwater Management Plan	No	-	-	-
Open Space Plan	No	-	-	-
Stream Corridor Management Plan	No	-	-	-
Watershed Management or Protection Plan	No	-	-	-
Economic Development Plan	Yes	County	Economic Development and Planning Department	Tioga County 2020 Strategic Plan
Comprehensive Emergency Management Plan	Yes	County	County Emergency Services	Comprehensive Emergency Management Plan
Emergency Operation Plan	No	-	-	-
Post-Disaster Recovery Plan	No	-	-	-
Transportation Plan	No	-	-	-
Strategic Recovery Planning Report	No	-	-	-
Other Plans:	No	-	-	-
<b>Regulatory Capability</b>				
Building Code	Yes	State & Local	-	Building Code of New York State
Zoning Ordinance	No	-	-	-
Subdivision Ordinance				
NFIP Flood Damage Prevention Ordinance	Yes	Federal, State, Local	Code Enforcement	Local Law #1-2012; adopted March 19, 2012
NFIP: Cumulative Substantial Damages	No	-	-	-
NFIP: Freeboard	Yes	State, Local	-	State mandated BFE+2 for single and two-family residential construction, BFE+1 for all other construction types
Growth Management Ordinances	No	-	-	-
Site Plan Review Requirements	No	-	-	-
Stormwater Management Ordinance	No	-	-	-
Municipal Separate Storm Sewer System (MS4)	No	-	-	-
Natural Hazard Ordinance	No	-	-	-
Post-Disaster Recovery Ordinance	No	-	-	-
Real Estate Disclosure Requirement	Yes	State	-	NYS mandate, Property Condition Disclosure Act, NY Code - Article 14 §460-467

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
Other (Special Purpose Ordinances [i.e., sensitive areas, steep slope])	No	-	-	-

### Administrative and Technical Capability

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

**Table 9.3-7. Administrative and Technical Capabilities**

Resources	Is this in place? (Yes or No)	Department/ Agency/Position
<b>Administrative Capability</b>		
Planning Board	Yes	Planning Board
Mitigation Planning Committee	No	-
Environmental Board/Commission	No	-
Open Space Board/Committee	No	-
Economic Development Commission/Committee	No	-
Maintenance Programs to Reduce Risk	Yes	Highway Department
Mutual Aid Agreements	Yes	Surrounding municipalities and Tioga County
<b>Technical/Staffing Capability</b>		
Planner(s) or engineer(s) with knowledge of land development and land management practices	No	
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	No	
Planners or engineers with an understanding of natural hazards	No	
NFIP Floodplain Administrator (FPA)	Yes	Code Enforcement Officer
Surveyor(s)	No	
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	No	
Scientist familiar with natural hazards	No	
Emergency Manager	No	
Grant writer(s)	No	
Staff with expertise or training in benefit/cost analysis	No	
Professionals trained in conducting damage assessments	No	

### Fiscal Capability

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

Table 9.3-8. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	Yes
Capital improvements project funding	Yes
Authority to levy taxes for specific purposes	No
User fees for water, sewer, gas or electric service	No
Impact fees for homebuyers or developers of new development/homes	No
Stormwater utility fee	No
Incur debt through general obligation bonds	No
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	No

### Community Classifications

The table below summarizes classifications for community program available to the Town of Berkshire.

Table 9.3-9. Community Classifications

Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	Not available.		
Public Protection (ISO Fire Protection Classes 1 to 10)	Not available.		
NYSDEC Climate Smart Community	No	-	-
Storm Ready Certification	Yes	County Level	-
Firewise Communities classification	No	-	-
Natural disaster/safety programs in/for schools	No		
Organizations with mitigation focus (advocacy group, non-government)	No		
Public education program/outreach (through website, social media)	No		
Public-private partnership initiatives addressing disaster-related issues	No		

Note:

N/A Not applicable

NP Not participating

- Unavailable

The classifications listed above relate to the community's ability to provide effective services to lessen its vulnerability to the hazards identified. These classifications can be viewed as a gauge of the community's capabilities in all phases of emergency management (preparedness, response, recovery and mitigation) and are

used as an underwriting parameter for determining the costs of various forms of insurance. The CRS class applies to flood insurance while the BCEGS and Public Protection classifications apply to standard property insurance. CRS classifications range on a scale of 1 to 10 with class 1 being the best possible classification, and class 10 representing no classification benefit. Firewise classifications include a higher classification when the subject property is located beyond 1000 feet of a creditable fire hydrant and is within 5 road miles of a recognized Fire Station.

Criteria for classification credits are outlined in the following documents:

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

### Self-Assessment of Capability

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

**Table 9.3-10. Self-Assessment Capability for the Municipality**

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

### National Flood Insurance Program

#### NFIP Floodplain Administrator (FPA)

Chris Hammond, Code Enforcement Officer

### Flood Vulnerability Summary

The Town has assets, both structures and population in the floodplain and works to minimize flood impacts in affected areas.



## Resources

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**Training:** The Town's designated NFIP Floodplain Administrator (FPA) has become a Certified Floodplain Manager through the ASFPM, and pursues relevant continuing education training such as FEMA Benefit-Cost Analysis.

**Retrofitting/Removal of Structures from Hazard Prone Areas:** Where appropriate, the Town of Berkshire supports the retrofitting, purchase, or relocation of structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority. The Town works to identify facilities that are viable candidates for each strategy based on cost-effectiveness. Implementation of these actions are based on available funding.

## Compliance History

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The Town maintains compliance with and good-standing in the NFIP including adoption and enforcement of floodplain management requirements (e.g. regulating all new and substantially improved construction in Special Hazard Flood Areas), floodplain identification and mapping, and flood insurance outreach to the community. The most recent compliance audit visit was conducted on January 11, 2002.

## Regulatory

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Local Law #1-2012 is the local law for flood damage prevention in the Town of Berkshire. The purpose of the law is to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas. The law identifies the code enforcement officer as the appointed local floodplain administrator.

## Integration of Hazard Mitigation into Existing and Future Planning Mechanisms

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

## Planning

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**Tioga County Hazard Mitigation Plan:** The Town of Berkshire supports the implementation, monitoring, maintenance, and updating of this Plan.

**Comprehensive Emergency Management Plans:** The Town of Berkshire works to complete ongoing updates of the Comprehensive Emergency Management Plans.

## Operational and Administration

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**Mutual Aid Agreements:** The Town works to establish agreements with entities that can provide support with FEMA/SOEM paperwork after disasters; qualified damage assessment personnel, improved post-disaster capabilities, FEMA/SOEM paperwork compilation, submissions, and record-keeping.

**Damage Assessments:** The Town works with regional agencies (i.e. County and SOEM) to help develop damage assessment capabilities at the local level through such things as training programs, certification of qualified individuals (e.g. code officials, floodplain managers, engineers).



**Inventories, Datasets, and Vulnerability Assessments:** The Town participates in local, county and/or state level projects and programs to develop improved structure and facility inventories and hazard datasets to support enhanced risk assessment efforts. Such programs may include developing a detailed inventory of critical facilities based upon FEMA’s Comprehensive Data Management System (CDMS) which could be used for various planning and emergency management purposes including supporting the performance of enhanced risk and vulnerability assessments for hazards of concern and supporting state, county and local planning efforts including mitigation (including updates to the State HMP), comprehensive emergency management, debris management, and land use.

Improved structural and facility inventories could incorporate flood, wind and seismic-specific parameters (e.g. first floor elevations, roof types, structure types based on FEMA-154 “Rapid Visual Screening of Buildings for Potential Seismic Hazards” methodologies). It is recognized that these programs will need to be initiated and supported at the County and/or State level, and will require training, tools and funding provided at the county, state and/or federal level.

### Education and Outreach

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The Town conducts and facilitates community and public education and outreach for residents and businesses with assistance from the County. Outreach includes the following to promote and effect natural hazard risk reduction:

- Provide and maintain links to the HMP website, and regularly post notices on the County/municipal homepage(s) referencing the HMP webpages.
- Prepare and distribute informational letters to flood vulnerable property owners and neighborhood associations, explaining the availability of mitigation grant funding to mitigate their properties, and instructing them on how they can learn more and implement mitigation.
- Use email notification systems and newsletters to better educate the public on flood insurance, the availability of mitigation grant funding, and personal natural hazard risk reduction measures.
- Work with neighborhood associations, civic and business groups to disseminate information on flood insurance and the availability of mitigation grant funding.

### Sheltering, Evacuation, and Temporary Housing

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

Tioga County, through a buildable land analysis, has identified areas suitable for placing temporary and permanent housing. Refer to Section 4.7.5 in Section 4 (County Profile) of Volume 1 of this plan for a description of resources identified by the county to support municipalities with the identification of evacuation, sheltering, and temporary and permanent housing. Each year, during the annual HMP progress meeting, the municipality will discuss their progress in identifying shelters, evacuation routes, and temporary and permanent housing for their community.

### Temporary and Long-Term Housing

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The Town has limited resources to identify temporary and long term housing sites, but is committed to working closely with the County to coordinate to address the needs of its residents by providing information on availability of mobile home sites and/or vacant rentals. Regarding long term housing, the Town will work with the County to identify sites with initial sites prioritized from the County buildable land map.





### **Evacuation and Sheltering Needs**

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During an evacuation situation, the Town Supervisor will contact the County Emergency Management Plan Coordinator and decide on evacuation routes. To address sheltering, needs are communicated by notification of the County Emergency Management Plan Coordinator, the Town Supervisor, and the Red Cross.

### **9.3.6 Mitigation Strategy and Prioritization**

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

#### **Past Mitigation Initiative Status**

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

Table 9.3-11. Status of Previous Mitigation Actions

Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
						Cost		
0	West Branch Owego Creek – Ford Hill Road –install stacked rock or block for proper tie in at upstream end of pipe to deter erosion.	Flood		Town DPW	Complete	Level of Protection		1. Discontinue 2. - 3. Project has been completed
1	Retrofit structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority.  Phase 1: Identify appropriate candidates for retrofitting based on cost-effectiveness versus relocation.  Phase 2: Where retrofitting is determined to be a viable option, work with property owners toward implementation of that action based on available funding from FEMA and local match availability.	Flood, Severe Storm, Earthquake		Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	Ongoing Capability	Cost	-	1. Discontinue 2. - 3. Part of FPA capability – work with property owners as an on needed basis
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
2	Purchase, or relocate structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority.  Phase 1: Identify appropriate candidates for relocation based on cost-effectiveness versus retrofitting.	Flood, Severe Storm		Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	Ongoing Capability	Cost	-	1. Discontinue 2. - 3. The Town works with property owners who are routinely flooded and damaged with any mitigation of the property that is best suited for the property.
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
	Phase 2: Where relocation is determined to be a viable option, work with property owners toward implementation of that action based on available funding from FEMA and local match availability.							
3	<p>Maintain compliance with and good-standing in the NFIP including adoption and enforcement of floodplain management requirements (e.g. regulating all new and substantially improved construction in Special Hazard Flood Areas), floodplain identification and mapping, and flood insurance outreach to the community.</p> <p>Further, continue to meet and/or exceed the minimum NFIP standards and criteria through the following NFIP-related continued compliance actions identified as Initiatives 4 – 11 (below).</p>	Flood, Severe Storms		Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, ISO FEMA	Ongoing Capability	Cost	-	<p>1. Discontinue</p> <p>2. -</p> <p>3. The Town continues to maintain their compliance with the NFIP; this is an ongoing capability for the town</p>
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
4	<p>Conduct and facilitate community and public education and outreach for residents and businesses to include, but not be limited to, the following to promote and effect natural hazard risk reduction: Provide and maintain links to the HMP website, and regularly post notices on the</p>	All Hazards		NFIP Floodplain Administrator	Ongoing Capability	Cost	-	<p>1. Discontinue</p> <p>2. -</p> <p>3. Yes – with help from county; town clerk can hand out that info</p>
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
	County/municipal homepage(s) referencing the HMP webpages. Prepare and distribute informational letters to flood vulnerable property owners and neighborhood associations, explaining the availability of mitigation grant funding to mitigate their properties, and instructing them on how they can learn more and implement mitigation. Use email notification systems and newsletters to better educate the public on flood insurance, the availability of mitigation grant funding, and personal natural hazard risk reduction measures. Work with neighborhood associations, civic and business groups to disseminate information on flood insurance and the availability of mitigation grant funding.							
5	Have designated NFIP Floodplain Administrator (FPA) become a Certified Floodplain Manager through the ASFPM and pursue relevant continuing education training such as FEMA Benefit-Cost Analysis.	Flood, Severe Storms		NFIP Floodplain Administrator	Ongoing Capability	Cost	-	1. Discontinue 2. - 3. The floodplain administrator stays up-to-date on trainings and certifications; it is part of their duty as the floodplain administrator
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
6	Continue to support the implementation, monitoring, maintenance,	All Hazards		Municipality (via mitigation planning point	Ongoing Capability	Cost	-	1. 2.
						Level of Protection	-	



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
	and updating of this Plan, as defined in Section 7.0			of contacts) with support from Planning Partners (through their Points of Contact), NYSOEM		Damages Avoided; Evidence of Success	-	3.
7	Complete the ongoing updates of the Comprehensive Emergency Management Plans	All Hazards		Municipality with support from NYSOEM	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. Part of County CEMP; Town provides support and input as needed
8	Create/enhance/ maintain mutual aid agreements with neighboring communities for continuity of operations.	All Hazards		Municipality with support from Surrounding municipalities and County	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. Town continuously works on creating, enhancing and maintaining mutual aid agreements. This is part of their day-to-day duties.
9	Identify and develop agreements with entities that can provide support with FEMA/SOEM paperwork after disasters; qualified damage assessment personnel – Improve post-disaster capabilities – damage assessment; FEMA/SOEM paperwork compilation, submissions, record-keeping	All Hazards		Municipality with support from County, NYSOEM, FEMA	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. Ongoing capability for the Town – officials support FEMA and NYS DHSES after disasters
10	Work with regional agencies (i.e. County and SOEM) to help develop damage assessment capabilities at the local level through such things as training programs, certification of qualified	All Hazards		Municipality with support from County, NYSOEM, FEMA	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. Ongoing capability for the Town – officials assist with developing damage assessments after disasters and attending trainings and classes when offered by the state and county.



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
	individuals (e.g. code officials, floodplain managers, engineers).							
11	Participate in local, county and/or state level projects and programs to develop improved structure and facility inventories and hazard datasets to support enhanced risk assessment efforts. Such programs may include developing a detailed inventory of critical facilities based upon FEMA's Comprehensive Data Management System (CDMS) which could be used for various planning and emergency management purposes including: Support the performance of enhanced risk and vulnerability assessments for hazards of concern. Support state, county and local planning efforts including mitigation (including updates to the State HMP), comprehensive emergency management, debris management, and land use. Improved structural and facility inventories could incorporate flood, wind and seismic-specific parameters (e.g. first floor elevations, roof types, structure types based on FEMA-154 "Rapid Visual Screening of Buildings for Potential Seismic Hazards"	All Hazards		HMP Coordinator	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. 3. If discontinue, explain why.
	methodologies). It is recognized that these programs will need to be initiated and supported at the County and/or State level, and will require training, tools and funding provided at the county, state and/or federal level.							
	2006 Initiative: East Branch Owego Creek- 2 location on Payne Marsh Rd off Rt 38 need increased culverts and streambank stabilization work. Increase size of culvert on E. Berkshire Rd.				Complete	Cost		1. Discontinue
						Level of Protection		2. -
						Damages Avoided; Evidence of Success		3. Road has been oiled/stoned



### Completed Mitigation Initiatives Not Identified in the Previous Mitigation Strategy

The Town of Berkshire has performed ongoing maintenance projects to reduce the impact of flooding but has not identified specific mitigation projects/activities that have been completed but were not identified in the previous mitigation strategy in the 2013 Plan.

### Proposed Hazard Mitigation Initiatives for the Plan Update

The Town of Berkshire worked closely with the County SWCD and County Department of Economic Development and Planning to provide input into this plan update. The Town was provided the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 ‘Selecting Appropriate Mitigation Measures for Floodprone Structures’ (March 2007) and FEMA ‘Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards’ (January 2013). The County mitigation planning consultant provides support and communicated the contents of the mitigation workshop to the Town as necessary to provide this update to the plan.

Table 9.3-12 summarizes the comprehensive-range of specific mitigation initiatives the Town of Berkshire would like to pursue in the future to reduce the effects of hazards. Some of these initiatives may be previous actions carried forward for this plan update. These initiatives are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. The four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.


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

Table 9.3-13 provides a summary of the prioritization of all proposed mitigation initiatives for the Plan update.



Table 9.3-12. Proposed Hazard Mitigation Initiatives

Project Number	Project Name	Description of the Problem	Description of the Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues?	Estimated Timeline	Lead and Support Agencies	Estimated Cost	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category
Town of Berkshire - 1	Letter "S" Hill Rd and Bridge (West End)	See Action Worksheet	See Action Worksheet	Flood	1-1,6-3	No	No	1 year	Town of Berkshire Highway Department	\$10,000 - \$100,000	Implementing this project will reduce both the frequency of flood events as well as reduce the severity and duration of the events that do occur. This will eliminate the loss of function during 1% annual chance, or lower, events as well as eliminate the loss of access to these properties during these events.	HMA, DEC, Tioga County Soil & Water, NYS DOT	High	SIP
Town of Berkshire -2	Jewett Hill Rd Creek bank reinforcement	See Action Worksheet	See Action Worksheet	Flood	1-1, 4-1, 6-3	No	No	1 year	Town of Berkshire Highway Department	\$10,000 - \$100,000	Implementing this project will reduce the severity and duration of the 1% annual chance, and lower, flood events that occur in this stream. This will eliminate the loss of function of Jewett Hill Rd during such events, as well as eliminate the loss of access to homes and properties along	HMA, DEC, Tioga County Soil & Water	High	SIP

Project Number	Project Name	Description of the Problem	Description of the Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues?	Estimated Timeline	Lead and Support Agencies	Estimated Cost	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category
											Jewett Hill Rd. This project will also preclude the need to repair and/or replace the three sluices that this problem currently threatens. As this issue is currently expected to increase flood risk to additional downstream areas, that risk would be avoided due to the implementation of this project.			
Town of Berkshire-3	Critical Facility – Town Hall	The Town Hall is located in a regulatory floodplain and may be susceptible to flood damage during heavy rain events. It is currently unknown if the building is protected to a 500-year event.	The Town will conduct a study to determine if the Town Hall is protected to the 500-year event. If it is not protected, the town will identify mitigation options to protect the facility to a 500-year event or worst case scenario.	Flood	1, 2	Yes 	No	Within 5 years	Town Board, Town Floodplain Manager	Less than \$10,000	Raise awareness of potential damages a critical facility can sustain; Identifies ways to protect the critical facility	Municipal Budget	Medium	EAP



**Notes:**

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

**Acronyms and Abbreviations:**

CAV	Community Assistance Visit
CRS	Community Rating System
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
FPA	Floodplain Administrator
HMA	Hazard Mitigation Assistance
N/A	Not applicable
NFIP	National Flood Insurance Program
OEM	Office of Emergency Management

**Potential FEMA HMA Funding Sources:**

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

**Timeline:**

The time required to complete the project

**Cost:**

Estimated costs associated with implementation

**Benefits:**

The benefits that implementation of this project will provide.

**Mitigation Category:**

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

**Critical Facility:**

- Yes 💧 - Critical Facility located in 1% floodplain



Table 9.3-13. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community	Total	High / Medium / Low
Town of Berkshire - 1	Letter "S" Hill Rd and Bridge (West End)	1	1	1	1	1	1	0	0	1	0	0	1	0	0	8	High
Town of Berkshire -2	Jewett Hill Rd Creek bank reinforcement	1	1	1	1	0	1	0	1	1	1	0	1	1	0	10	High
Town of Berkshire-3	Critical Facility – Town Hall	1	1	1	1	0	1	1	0	0	1	0	1	0	0	8	Medium

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



### **9.3.7 Future Needs to Better Understand Risk/Vulnerability**

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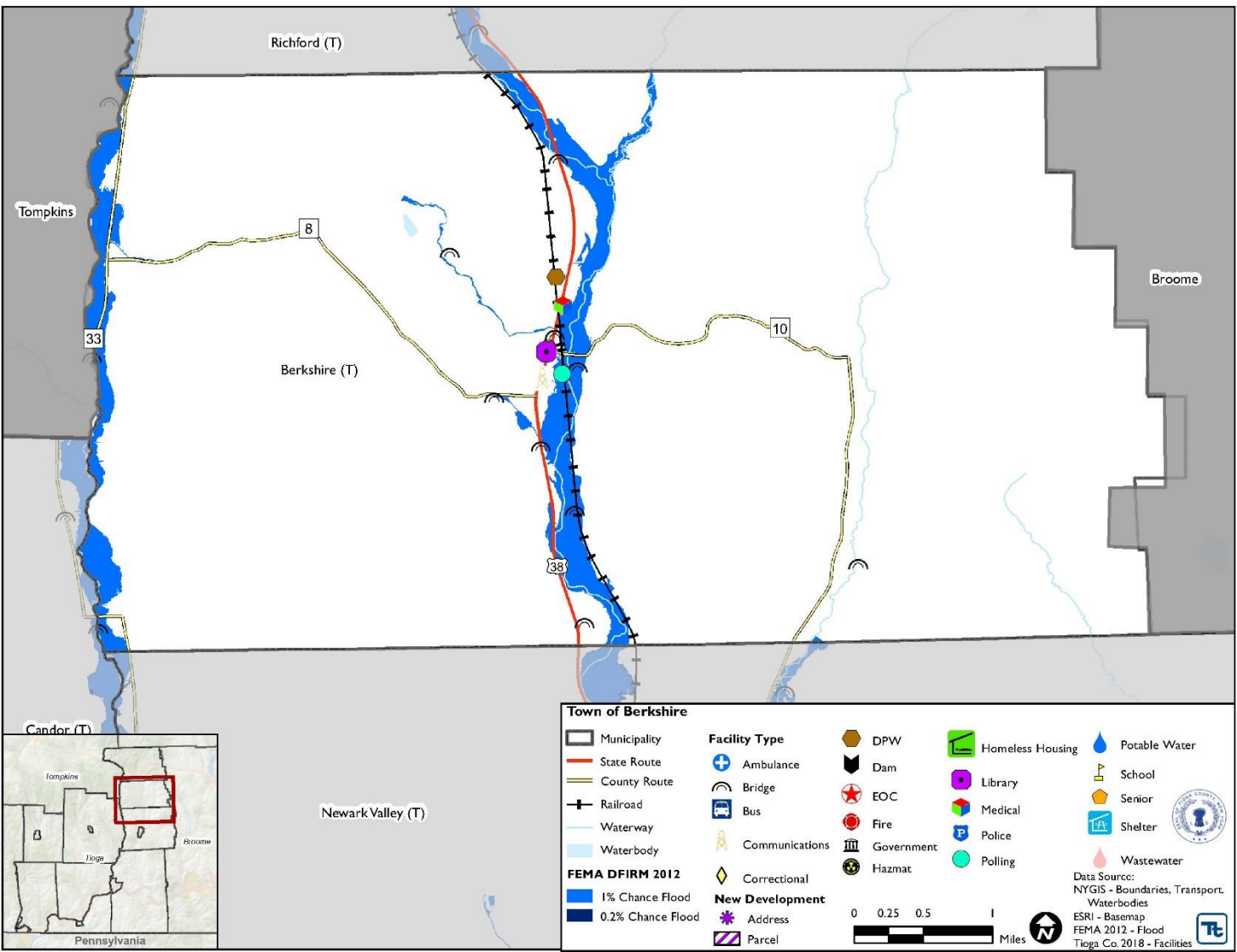
None at this time.

### **9.3.8 Hazard Area Extent and Location**

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Hazard area extent and location maps have been generated for the Town of Berkshire that illustrate the probable areas impacted within the municipality. These maps are based on the best available data at the time of the preparation of this plan and are considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the Town of Berkshire has significant exposure. These maps are illustrated in the hazard profiles within Section 5.4, Volume I of this Plan. A map of the Town of Berkshire Hazard Area Extent and Location is provided on the following page. This map indicates the location of the regulatory floodplain as well as identified critical facilities within the municipality.

Figure 9.3-1. Town of Berkshire Hazard Area Extent and Location





Town of Berkshire Action Worksheet			
<b>Project Name:</b>	Letter "S" Hill Rd and Bridge (West End)		
<b>Project Number:</b>	Town of Berkshire-1		
<b>Risk / Vulnerability</b>			
<b>Hazard(s) of Concern:</b>	Flooding		
<b>Description of the Problem:</b>	Letter "S" Hill Road and the bridge approximately 300' west of N Ketchumville Rd (approximately 42.286824, -76.115744) are prone to seasonal flooding by the Ketchumville Branch. Additionally, the stream rises during heavy rains enough to cover the bridge thus preventing passage by residents. One house is completely cutoff from emergency services (seasonal maintenance road). This flooding is occurring due to the amount of water in the stream overwhelming the opening under the roadway, rather than an issue of debris or other blockages. Due to this repetitive flooding, the bridge is being undermined/eroded and has received a yellow flag from DOT inspections.		
<b>Action or Project Intended for Implementation</b>			
<b>Description of the Solution:</b>	Elevate the roadway and bridge, increasing the size of the opening to prevent this type of flooding. Some alteration to the alignment of the Ketchumville Branch and/or other nearby waterways may also help to divert floodwaters from this location.		
<b>Is this project related to a Critical Facility?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
<b>Is this project related to a Critical Facility located within the 100-year floodplain?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
<b>Level of Protection:</b>	100	<b>Estimated Benefits (losses avoided):</b>	Implementing this project will reduce both the frequency of flood events as well as reduce the severity and duration of the events that do occur. This will eliminate the loss of function during 1% annual chance, or lower, events as well as eliminate the loss of access to these properties during these events.
<b>Useful Life:</b>	30		
<b>Estimated Cost:</b>	Medium (\$10k - \$100k)		
<b>Plan for Implementation</b>			
<b>Prioritization:</b>	High	<b>Desired Timeframe for Implementation:</b>	1 year
<b>Estimated Time Required for Project Implementation:</b>	4-6 weeks	<b>Potential Funding Sources:</b>	HMA, DEC, Tioga County Soil & Water, NYS DOT
<b>Responsible Organization:</b>	Town of Berkshire Highway Department	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	Town Comprehensive Plan
<b>Three Alternatives Considered (including No Action)</b>			
<b>Alternatives:</b>	<b>Action</b>	<b>Estimated Cost</b>	<b>Evaluation</b>
	No Action	\$0	Continued re-building of road surface after storm events, continued cost to tax payers. Bridge will eventually have to be replaced.
	Retention/detention pond or diversion	\$17.50 - \$35.00 per cubic meter of wet detention storage area; land acquisition	Land acquisition that would be necessary in the area is unlikely to be acceptable due to current land use
	Expand/enlarge the creek	\$100,000	ecological problems with making a small stream larger; upstream and downstream flow issues; land acquisition issues
<b>Progress Report (for plan maintenance)</b>			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			



Town of Berkshire Action Worksheet		
<b>Project Name:</b>	Letter "S" Hill Rd and Bridge (West End)	
<b>Project Number:</b>	Town of Berkshire-1	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	This mitigation action will provide protection
Cost-Effectiveness	1	Will prevent repetitive loss of road surface, and reduce damage to bridge
Technical	1	Technical requirements of this project are feasible to implement
Political	1	
Legal	1	This project is located within the Town of Berkshire
Fiscal	0	
Environmental	0	
Social	1	This mitigation action can reduce potentially isolated populations
Administrative	0	
Multi-Hazard	0	
Timeline	1	This project can be completed within 5 years.
Agency Champion	0	
Other Community Objectives	0	
<b>Total</b>	8	
<b>Priority (High/Med/Low)</b>	High	





Town of Berkshire Action Worksheet			
<b>Project Name:</b>	Jewett Hill Rd Creek bank reinforcement		
<b>Project Number:</b>	Town of Berkshire-2		
<b>Risk / Vulnerability</b>			
<b>Hazard(s) of Concern:</b>	Flooding & erosion		
<b>Description of the Problem:</b>	<p>The banks of this creek are rapidly eroding due to heavy rains (flash floods). The creek is constrained on one side (west) by a hillside and on the other (east) by Jewett Hill Rd. The erosion, which is ongoing and expected to continue, already threatens the physical integrity of the roadway. There are approximately 12 homes in the subject area of this road lying between the upstream (42.311808, -76.195562) and downstream (42.308212, -76.191310) crossings. There are also 3 sluices at risk due to the erosion of this creek's banks, all of which are showing signs of erosion. As the problems worsens, flood risk in the area further increases and exposes other areas to increased flood risk. This will be exacerbated with the failure of any of the at-risk sluices. Flash floods causing bank erosion to have occurred approximately three times in the last decade, including two major events in 2011 and July 2018.</p>		
<b>Action or Project Intended for Implementation</b>			
<b>Description of the Solution:</b>	<p>Reinforce or stabilize the creek banks and road shoulders. Reduce or delay water flow to this area of the stream. This could be accomplished with increased upstream retention and/or detention, channel realignment, or a combination of these. A bank stabilization project was performed in the winter of 1995. This helped but the problem has returned so a longer-term solution is needed.</p>		
<b>Is this project related to a Critical Facility?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
<b>Is this project related to a Critical Facility located within the 100-year floodplain?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
<b>Level of Protection:</b>	100	<b>Estimated Benefits (losses avoided):</b>	<p>Implementing this project will reduce the severity and duration of the 1% annual chance, and lower, flood events that occur in this stream. This will eliminate the loss of function of Jewett Hill Rd during such events, as well as eliminate the loss of access to homes and properties along Jewett Hill Rd. This project will also preclude the need to repair and/or replace the three sluices that this problem currently threatens. As this issue is currently expected to increase flood risk to additional downstream areas, that risk would be avoided due to the implementation of this project.</p>
<b>Useful Life:</b>	30		
<b>Estimated Cost:</b>	\$50k - \$100,000+		
<b>Plan for Implementation</b>			
<b>Prioritization:</b>	High	<b>Desired Timeframe for Implementation:</b>	1 year
<b>Estimated Time Required for Project Implementation:</b>	3 months	<b>Potential Funding Sources:</b>	HMA, DEC, Tioga County Soil & Water
<b>Responsible Organization:</b>	Town of Berkshire Highway Department	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	Town Comprehensive Plan
<b>Three Alternatives Considered (including No Action)</b>			
<b>Alternatives:</b>	<b>Action</b>	<b>Estimated Cost</b>	<b>Evaluation</b>
	No Action	\$0	The road will be undermined and must be rebuilt. This cost will be prohibitive to taxpayers.
	Upstream retention/detention	\$17.50 - \$35.00 per cubic meter of wet detention storage area.	Damage to the streambank is already occurring, so while this may slow that damage, it will not necessarily stop the effects of the erosion that have already occurred. Additionally, this alternative may prove to be costlier over time due to the ongoing maintenance it would require.
	Elevate the roadway	\$400k - \$1M	More research would be necessary for this as it would have to account for the ground under the road being allowed to continue to erode; very expensive
<b>Progress Report (for plan maintenance)</b>			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			



Town of Berkshire Action Worksheet		
<b>Project Name:</b>	Jewett Hill Rd Creek bank reinforcement	
<b>Project Number:</b>	Town of Berkshire-2	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
<b>Life Safety</b>	1	This mitigation can reduce the change for isolation populations during flash flood events.
<b>Property Protection</b>	1	This project will protect the creek bank from further erosion and reduce impact on road crossings of streams.
<b>Cost-Effectiveness</b>	1	
<b>Technical</b>	1	The technical requirements of this project are feasible to implement
<b>Political</b>	0	
<b>Legal</b>	1	This project is located within the Town of Berkshire
<b>Fiscal</b>	0	
<b>Environmental</b>	1	This project will prevent further erosion and environmental impact from flood events.
<b>Social</b>	1	Creek bank reinforcement can reduce the overall possibility of isolation population from 12 properties within the hazard area.
<b>Administrative</b>	0	
<b>Multi-Hazard</b>	1	This project will reduce the impact of flooding and erosion.
<b>Timeline</b>	1	This mitigation action can be completed within 5 years.
<b>Agency Champion</b>	1	
<b>Other Community Objectives</b>	0	
<b>Total</b>	10	
<b>Priority (High/Med/Low)</b>	High	

## 9.4 TOWN OF CANDOR

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



2010 Population: 851  
Population in 100 year Floodplain (SFHA): 111

Land Area: 60,498 acres  
Land Area in Floodplain: 3.2%  
NFIP policies: 31  
NFIP Policies in SFHA: 17  
NFIP Claims: 27  
Total NFIP Losses: \$448,164



Number of Buildings: 2,024  
Total Replacement Building Value: \$517.3 million  
Number of Buildings in the SFHA: 84  
Total Replacement Building Value Exposed in the SFHA: \$23.3 million

Mitigation Focus  
Flood and Multi Hazard



### 9.4.1 Hazard Mitigation Plan Point of Contact

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

Primary Point of Contact	Alternate Point of Contact
Bill Strosahl, Supervisor Phone: 607-659-3175 Email: <a href="mailto:supervisor@townofcandor.org">supervisor@townofcandor.org</a>	George Williams, Councilman Phone: 607-659-4250 Email: <a href="mailto:grw3bn9mar@yahoo.com">grw3bn9mar@yahoo.com</a>
Floodplain Administrator	
James Douglas, Code Enforcement Officer Phone: 607-659-3175 Email: <a href="mailto:code.enforcement@townofcandor.org">code.enforcement@townofcandor.org</a>	

### 9.4.2 Municipal Profile

The Town of Candor is in Tioga County, NY. The town is bordered by Tompkins County to the north, the Town of Spencer to the west, the Town of Newark Valley to the east, and the Town of Tioga to the south. According to the United States Census Bureau, the town has a total area of 94.6 square miles (245.0 km<sup>2</sup>), of which, 94.5 square miles (244.8 km<sup>2</sup>) of it is land and 0.1 square miles (0.2 km<sup>2</sup>) of it (0.06%) is water. New York State Route 96 intersects New York State Route 96B in Candor village and the West Branch of Owego Creek defines the east town line.

The Town of Candor is governed by a supervisor and four council members. According to the 2010 Census, the community's population was 4,454.

### Growth/Development Trends

The following table summarizes recent residential/commercial development since 2012 to present and any known or anticipated major residential/commercial development and major infrastructure development that has been identified in the next five years within the municipality. Refer to the map in 9.4.8 of this annex which illustrates the hazard areas along with the location of potential new development.

**Table 9.4-1. Growth and Development**

Property or Development Name	Type (e.g. Res., Comm.)	# of Units / Structures	Location (address and/or Parcel ID)	Known Hazard Zone(s)	Description/Status of Development
<b>Recent Development from 2012 to present</b>					
Double Aught Lumber	Comm.	2	94.00-1-19	1% Annual Chance Flood Event	Complete
Midwest, LLC, Dollar General	Comm.	1	94.00-1-25.38	1% Annual Chance Flood Event	Complete
Catatonk Golf Club	Comm.	1	83.00-1-53.10	1% Annual Chance Flood Event	Complete
Bostwicks Auctions	Comm.	1	94.00-1-25.24	No	In process
<b>Known or Anticipated Development in the Next Five (5) Years</b>					
Dollar General	Comm.	1	61.00-1-54.11	No	Planning Board approved

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

### 9.4.3 Natural Hazard Event History Specific to the Municipality

Tioga County has a history of natural and non-natural hazard events as detailed in Volume I, Section 5.0 of this plan. A summary of historical events is provided in each of the hazard profiles and includes a chronology of events that have affected the County and its municipalities. For the purpose of this plan update, events that have occurred in the County from 2012 to December 31, 2017 were summarized to indicate the range and impact of hazard events in the community. Information regarding specific damages is included, if available, based on reference material or local sources. This information is presented in the table below. For details of these and additional events, refer to Volume I, Section 5.0 of this plan.

Table 9.4-2. Hazard Event History

Dates of Event	Event Type (Disaster Declaration if applicable)	Tioga County Designated?	Summary of Damages/Losses
6/14/15	N/A	N/A	In some areas, homes, schools and other businesses were flooded. Although the county was impacted, the municipality did not suffer any damages.
3/14/17	DR 4322	Yes	A Nor'easter moved up the eastern US coast on March 13th to late on the 14th. Heavy snow spread across parts of central New York and Pennsylvania late on March 13th. By late evening on the 14th snowfall amounts range from 8 to 33 inches of snow. After the strong area of low pressure moved northeast, lake effect snow bands formed producing more snow across the area on March 15, 2017. Although the county was impacted, the municipality did not suffer any damages.
7/23/17	N/A	N/A	Rapid rises of area streams and creeks resulted in severe flash flooding for the Nichols, NY (\$284K in damages) and Vestal, NY areas. Although the county was impacted, the municipality did not suffer any damages.

Notes:

EM Emergency Declaration (FEMA)

FEMA Federal Emergency Management Agency

DR Major Disaster Declaration (FEMA)

N/A Not applicable

### 9.4.4 Hazard Vulnerabilities and Ranking

The hazard profiles in Section 5.0 of this plan have detailed information regarding each plan participant's vulnerability to the identified hazards. This section provides a summary of exposure and impacts from significant hazards of concern as identified by the Town of Candor. For additional vulnerability information relevant to this jurisdiction, refer to Section 5.0.

#### Hazard Risk Ranking

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

As discussed in Section 5.3 (Hazard Ranking), each participating town or village may have differing degrees of risk exposure and vulnerability compared to Tioga County as a whole. Therefore, each municipality ranked the degree of risk to each hazard as it pertains to their community. The table below summarizes the hazard risk/vulnerability rankings of potential natural hazards for the Town of Candor. The Town of Candor has reviewed the County hazard risk/vulnerability risk ranking table as well as its individual results to reflect the relative risk of the hazards of concern to the community. The Town is in agreement with the calculated rankings and no adjustments were made.

Table 9.4-3. Hazard Risk/Vulnerability Risk Ranking

Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard <sup>a, b, c</sup>	Probability of Occurrence	Hazard Ranking
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Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard <sup>a, b, c</sup>		Probability of Occurrence	Hazard Ranking
Drought	Damage estimate not available		Frequent	Medium
Flood	RCV Exposed to 1% Annual Chance Flood Event	\$13,832,000	Frequent	Medium
Severe Storm	100-year MRP	\$0	Frequent	High
	500-year MRP	\$14,217		
Severe Winter Weather	1% GBS	\$3,255,370	Frequent	High
	5% GBS	\$16,276,850		

Notes:

- Building damage ratio estimates based on FEMA 386-2 (August 2001)
- Loss estimates for the severe storm and severe winter storm hazards are structural values only and do not include the value of contents.
- Loss estimates for the flood hazard represents both structure and contents.

### National Flood Insurance Program (NFIP) Summary

The following table summarizes the NFIP statistics for the Town of Candor.

**Table 9.4-4. NFIP Summary**

Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 100-year Boundary (3)
Candor (T)	33	27	\$448,164.00	1	0	17

Source: FEMA 2018

- Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA and are current as of February 28, 2018 and are summarized by Community Name. Please note the total number of repetitive loss properties excludes the severe repetitive loss properties. The number of claims represents claims closed by 2/28/2018. Total building and content losses from the claims file provided by FEMA Region 2.
- Total building and content losses from the claims file provided by FEMA Region 2.

### Critical Facilities Flood Risk

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

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

**Table 9.4-5. Potential Flood Losses to Critical Facilities**

Name	Type	Exposure		Potential Loss from 1% Flood Event		Addressed by Proposed Action
		1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	



Name	Type	Exposure		Potential Loss from 1% Flood Event		Addressed by Proposed Action
		1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	
Candor Main Station	EOC	X	X	-	-	Town of Candor-5
Weltonville Fire Station	EOC	X	X	22.05	95.14	Town of Candor-5
Candor Main Station	Fire	X	X	-	-	Town of Candor-5
Weltonville	Fire	X	X	22.05	95.14	Town of Candor-5
Ward Street Well 1	Well	X	X	-	-	Town of Candor-5

Source: Tioga County GIS, FEMA 2012, and Hazus 4.2

### Identified Issues

The municipality has identified the following vulnerabilities within their community:

- At the time of the plan update, the Town did not identify any vulnerabilities within their community.

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

- Low-lying areas, especially those on the valley floors/near stream beds
- Any roads in village of Candor, Owego
- Village of Owego
- Owego, NY, Village, Almost all of it. Parts of Waverly, the Cannonhole in Barton
- Marshland Road, Apalachin, NY McFall Road, Apalachin, NY Village of Owego (Front Street, Fifth Avenue)

### 9.4.5 Capability Assessment

This section identifies the following capabilities of the local jurisdiction:

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

### Planning and Regulatory Capability

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

Table 9.4-6. Planning and Regulatory Tools

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
Planning Capability				





Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
Master Plan	Yes	Local	Planning Board	Master Plan
Capital Improvements Plan	No	-	-	-
Floodplain Management / Basin Plan	Yes	Local	Floodplain Administrator	Local Law #1 of 2012 Flood Damage prevention
Stormwater Management Plan	Yes, May 2015	County	Tioga County / Town of Owego 2015	2020 Stormwater Management Plan
Open Space Plan	No	-	-	-
Stream Corridor Management Plan	No	-	-	-
Watershed Management or Protection Plan	No	-	-	-
Economic Development Plan	Yes	County	Economic Development and Planning Department	Tioga County 2020 Strategic Plan
Comprehensive Emergency Management Plan	No	-	-	-
Emergency Operation Plan	Yes	Local	Town Board	Emergency Management Plan
Post-Disaster Recovery Plan	No	-	-	-
Transportation Plan	No	-	-	-
Strategic Recovery Planning Report	No	-	-	-
Other Plans:	-	-	-	-
<b>Regulatory Capability</b>				
Building Code	Yes	State & Local	Code Enforcement	Local law #3 of 2006 Administration & Enforcement of NYS Uniform Fire prevention & Building Code
Zoning Ordinance	No	-	-	-
Subdivision Ordinance	Yes	Local	Planning Board	Local Law #8 of 2011 Subdivision Regulations
NFIP Flood Damage Prevention Ordinance	Yes	Federal, State, Local	Code Enforcement	Local Law #1 of 2012 Flood Damage prevention
NFIP: Cumulative Substantial Damages	No	-	-	-
NFIP: Freeboard	Yes	State, Local	Code Enforcement	State mandated BFE+2 for single and two-family residential construction, BFE+1 for all other construction types
Growth Management Ordinances	No	-	-	-
Site Plan Review Requirements	Yes	Local	Planning Board	Local Law #1 of 2017
Stormwater Management Ordinance	No	-	-	-
Municipal Separate Storm Sewer System (MS4)	No	-	-	-



Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
Natural Hazard Ordinance	No	-	-	-
Post-Disaster Recovery Ordinance	No	-	-	-
Real Estate Disclosure Requirement	Yes	State	-	NYS mandate, Property Condition Disclosure Act, NY Code - Article 14 §460-467
Other (Special Purpose Ordinances [i.e., sensitive areas, steep slope])	No	-	-	-

### Administrative and Technical Capability

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

**Table 9.4-7. Administrative and Technical Capabilities**

Resources	Is this in place? (Yes or No)	Department/ Agency/Position
<b>Administrative Capability</b>		
Planning Board	Yes	Planning Board
Mitigation Planning Committee	No	-
Environmental Board/Commission	No	-
Open Space Board/Committee	No	-
Economic Development Commission/Committee	No	-
Maintenance Programs to Reduce Risk	No	-
Mutual Aid Agreements	Yes	Highway Department
<b>Technical/Staffing Capability</b>		
Planner(s) or engineer(s) with knowledge of land development and land management practices	No	-
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	Yes	Town Engineer
Planners or engineers with an understanding of natural hazards	No	-
NFIP Floodplain Administrator (FPA)	Yes	Code Enforcement Officer
Surveyor(s)	No	-
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	No	-
Scientist familiar with natural hazards	No	-
Emergency Manager	No	-
Grant writer(s)	Yes	Grant Writer
Staff with expertise or training in benefit/cost analysis	No	-
Professionals trained in conducting damage assessments	No	-

### Fiscal Capability



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

**Table 9.4-8. Fiscal Capabilities**

Financial Resources	Accessible or Eligible to Use (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	No
Capital improvements project funding	Yes
Authority to levy taxes for specific purposes	No
User fees for water, sewer, gas or electric service	No
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	No
Open Space Acquisition funding programs	No
Other	-

### Community Classifications

The table below summarizes classifications for community program available to the Town of Candor.

**Table 9.4-9. Community Classifications**

Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	-	Interviewed 3/29/2018
Public Protection (ISO Fire Protection Classes 1 to 10)	No	-	-
NYSDEC Climate Smart Community	No	-	-
Storm Ready Certification	Yes	County	-
Firewise Communities classification	No	-	-
Natural disaster/safety programs in/for schools	No	-	-
Organizations with mitigation focus (advocacy group, non-government)	No	-	-
Public education program/outreach (through website, social media)	No	-	-
Public-private partnership initiatives addressing disaster-related issues	No	-	-

Note:

N/A Not applicable

NP Not participating

- Unavailable

The classifications listed above relate to the community's ability to provide effective services to lessen its vulnerability to the hazards identified. These classifications can be viewed as a gauge of the community's

capabilities in all phases of emergency management (preparedness, response, recovery and mitigation) and are used as an underwriting parameter for determining the costs of various forms of insurance. The CRS class applies to flood insurance while the BCEGS and Public Protection classifications apply to standard property insurance. CRS classifications range on a scale of 1 to 10 with class 1 being the best possible classification, and class 10 representing no classification benefit. Firewise classifications include a higher classification when the subject property is located beyond 1000 feet of a creditable fire hydrant and is within 5 road miles of a recognized Fire Station.

Criteria for classification credits are outlined in the following documents:

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

### Self-Assessment of Capability

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

**Table 9.4-10. Self-Assessment Capability for the Municipality**

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

### National Flood Insurance Program

#### NFIP Floodplain Administrator (FPA)

Jim Douglas, Code Enforcement Officer

#### Flood Vulnerability Summary

The municipality maintains does not maintain lists/inventories of properties that have been flood damaged or identify property owners who are interested mitigation (e.g. elevation, acquisition). The FPA noted that in the 2011 flood, there were 23 residential structures with moderate damage and 63 residential structures with minor damage. The FPA does not make substantial damage estimates. The FPA was not aware of any property owners that were interested in mitigation.

## Resources

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The FPA is the sole person responsible for floodplain administration. The FPA stated that NFIP administration services or functions include permitting inspections, damage assessments, and record-keeping. The FPA stated that the Town does not provide any education or outreach to the community regarding flood hazards/risk or flood risk reduction through NFIP insurance, mitigation, etc. The FPA does not feel there are any barriers to running an effective floodplain management program and feels adequately supported and trained to fulfill their responsibilities as the municipal floodplain administrator. The FPA would consider attending continuing education and/or certification training on floodplain management if it were offered in the County for all local floodplain administrators.

## Compliance History

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The community is in good-standing in the NFIP. The most recent Community Assistance Visit (CAV) was in 2012. All deficiencies noted in the CAV have been corrected. The Town works to maintain compliance with and good-standing in the NFIP including adoption and enforcement of floodplain management requirements (e.g. regulating all new and substantially improved construction in Special Hazard Flood Areas), floodplain identification and mapping, and flood insurance outreach to the community.

## Regulatory

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The FPA stated that floodplain management regulations/ordinances exceed the FEMA and State minimum requirements as there are no critical use facilities in the floodplain. The Town issues floodplain development permits and monitors construction in floodplain. Elevation certificates are archived with floodplain development permits for properties. The FPA was not aware of any other local ordinances, plans or programs (e.g. site plan review) that support floodplain management and meeting the NFIP requirements.

## Integration of Hazard Mitigation into Existing and Future Planning Mechanisms

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

## Planning

---

**Hazard Mitigation:** The Town of Candor actively participated in the 2018 update of the Tioga County Hazard Mitigation Plan. The Town continues to support the implementation, monitoring, maintenance, and updating of the plan.

**Comprehensive Plan:** The Town's Comprehensive Plan was last adopted in 2016 and was developed by the Planning Board. The plan includes areas of natural hazard risk. The Plan does not refer to the Countywide Hazard Mitigation Plan but discusses the coordination of the Town with the Tioga County Soil and Water Conservation District and other municipalities along the various creeks of the region. The Comprehensive Plan identifies various goals involving growth, redevelopment, economic development, open space, and watershed management.

**Comprehensive Emergency Management Plan:** The Town of Candor has a Comprehensive Emergency Management Plan, but it does not currently refer to the Hazard Mitigation plan.

### Regulatory and Enforcement (Ordinances)

**Flood Damage Prevention Ordinance:** The Town of Candor's NFIP Flood Damage Protection Ordinance (Local Law #1 of 2012) meets the minimum Federal and State NFIP regulatory requirements. It is the purpose of this local law to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by provisions designed to:

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

The objectives of the law are:

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

The Ordinance exceeds the minimum Federal and State NFIP regulatory requirements through the prohibition of building critical use facilities within the floodplain.

**Zoning, Subdivision, and Site Plan Review:** The Town of Candor's municipal zoning and subdivision regulations and site plan review process consider natural hazard risk. The Planning Board is provided with the Flood Damage Prevention Law, SEQR, and input from the floodplain administrator to guide their decisions with respect to natural hazard risk management.

### Operational and Administration

**Mutual Aid:** The Town has established shared use agreements with neighboring towns and county for continuity of operations. The Town also has a shared use agreement with Village of Candor for snow removal.

**Damage Assessment:** The Town works with regional agencies (i.e. County and SOEM) to help develop damage assessment capabilities at the local level through such things as training programs, certification of qualified individuals (e.g. code officials, floodplain managers, engineers).



The Town of Candor does not have a municipal planner or contract with a planning firm. The Town does not have staff or contract with firms that have experience with developing Benefit-Cost Analysis. The Town does not have staff or contract with firms who can perform Substantial Damage Estimates. In 2011, when Tropical Storm Lee caused extensive flooding, FEMA completed Substantial Damage Estimates. The Town has staff that have experience in preparing grant applications for mitigation projects. Staff do not receive training or continuing professional education which supports natural hazard risk reduction and no staff have job descriptions that include mitigation projects or other efforts to reduce natural hazard risk. The Town noted that requiring the floodplain administrator to become certified would be beneficial.

The Planning Board is responsible for developing regulations and hears variances requests. The Zoning Board of Appeals also hears variance requests. The Town does not have any other boards or committees that include functions with respect to managing natural hazard risk. Stormwater Management functions in the Town are performed by the NY DEC which issues permits. NFIP Floodplain Management functions are performed by the Code Enforcement Officer.

### **Funding**

The Town of Candor's municipal budget includes line items for mitigation projects such as bridge repair and replacement. The Town does not have a capital improvements plan. The Town has not pursued grant funds for mitigation related projects and has not identified any other mechanisms to fiscally support hazard mitigation projects.

### **Education and Outreach**

With the support of the County, the Town conducts and facilitates community and public education and outreach for residents and businesses to include, but is not be limited to, the following to promote and effect natural hazard risk reduction:

- Provide and maintain links to the HMP website, and regularly post notices on the County/municipal homepage(s) referencing the HMP webpages.
- Prepare and distribute informational letters to flood vulnerable property owners and neighborhood associations, explaining the availability of mitigation grant funding to mitigate their properties, and instructing them on how they can learn more and implement mitigation.
- Use email notification systems and newsletters to better educate the public on flood insurance, the availability of mitigation grant funding, and personal natural hazard risk reduction measures.
- Work with neighborhood associations, civic and business groups to disseminate information on flood insurance and the availability of mitigation grant funding.

### **Sheltering, Evacuation, and Temporary Housing**

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

Tioga County, through a buildable land analysis, has identified areas suitable for placing temporary and permanent housing. Refer to Section 4.7.5 in Section 4 (County Profile) of Volume 1 of this plan for a description of resources identified by the county to support municipalities with the identification of evacuation, sheltering, and temporary and permanent housing. Each year, during the annual HMP progress meeting, the municipality will discuss their progress in identifying shelters, evacuation routes, and temporary and permanent housing for their community.



### Temporary Housing

The Town of Candor identified the Jewel Mobile Home Park and the Candor Landing Park as potential sites in the municipality for the placement of temporary housing for residents displaced by a disaster. Jewel Mobile Home Park at 774 Owego Road has a capacity of 6. A building permit would be required to ensure conformance with the NYS Uniform Fire Prevention and Building Code. Candor Landing Park at 761 Owego Road has the capacity for 8-10 units. Like the Jewel Mobile Home Park, a building permit would be necessary to ensure conformance with the building code.

The Town has also identified the Ward Subdivision on Bambi Lane and Fawn Drive as a potential site suitable for relocating houses of the floodplain and/or building new homes once properties in the floodplain are acquired. The Subdivision has the capacity for 10-12 lots and would require building permits.

### Evacuation and Sheltering Needs

The Town of Candor has identified the Candor School District at Academy Street as the designated emergency shelter. The capacity of the facility is 200. The facility does not accommodate pets but is ADA compliant and has backup power. The facility has a cafeteria and recreational area and borders the United Health Service building.

In evacuation scenarios, the Town Highway Superintendent is in charge of determining an evacuation route. Route 96 runs through the center of town and splits off into Route 96B & Route 96 north of town. Honeypot Rd. is an easterly route. There are numerous side roads that may be accessed as well.

## 9.4.6 Mitigation Strategy and Prioritization

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

### Past Mitigation Initiative Status

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



Table 9.4-11. Status of Previous Mitigation Actions

Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
						Cost		
1	Flood wall or Levee to protect areas along the Catatonk Creek from flooding. Starting above the upper dam and extending past the Town Barns on Humiston Street.	Flood	In need of a structure to protect from flooding	Candor Central School District as Lead agency. The Village of Candor & the Town of Candor as support agencies	No Progress	Cost	-	1. Include in 2018 HMP 2. Full study should be done to determine if viable. 3. -
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
2	Relocate salt storage structure out of the floodplain.	Flood	Salt storage structure located in floodplain and susceptible to damage and losses.	Town of Candor	Complete	Cost	\$400,000	1. Discontinue 2. - 3. Complete
						Level of Protection	100-year	
						Damages Avoided; Evidence of Success	Salt storage supply no longer damaged by floods	
3	Portable storage pods. Purchase emergency response goods, cots, bedding, sanitary, & other recommended items.	All	The Town does not have proper emergency response goods	Town of Candor	No Progress	Cost	-	1. Include in 2018 HMP Purchase emergency response goods, cots, bedding, sanitary, & other recommended items. 2. - 3. -
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
4	Repair damage to dam caused by Tropical Storm Lee September, 2011	Flood	The dam was damaged during Tropical Storm Lee in 2011	Town of Candor	In Progress	Cost	-	1. Include in 2018 HMP Permits issued, work to be completed this year 2. - 3. -
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
5	Retrofit structures located in hazard-prone areas to protect structures from future damage, with	Flood, Severe Storm, Earthquake	Structures are not all protected from flood events and	Municipality (via Municipal Engineer/NFIP Floodplain	In Progress	Cost	-	1. Include in 2018 HMP Renovate existing town barns and add addition to include generator. (Work Completed 2017)
						Level of Protection	-	





Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. 3. If discontinue, explain why.
	repetitive loss and severe repetitive loss properties as priority. Address the Weltonville Fire Station and the Candor Main Station. Phase 1: Identify appropriate candidates for retrofitting based on cost-effectiveness versus relocation. Phase 2: Where retrofitting is determined to be a viable option, work with property owners toward implementation of that action based on available funding from FEMA and local match availability.		damages	Administrator) with support from NYSOEM, FEMA		Damages Avoided; Evidence of Success	-	3. -
6	Purchase, or relocate structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority. Phase 1: Identify appropriate candidates for relocation based on cost-effectiveness versus retrofitting. Phase 2: Where relocation is determined to be a viable option, work with property owners toward implementation of that action based on available funding from FEMA and local match availability.	Flood, Severe Storm	Structures are not all protected from flood events and damages	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	No Progress	Cost	-	1. Include in 2018 HMP
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. -
7	Maintain compliance with and good-standing in the NFIP including adoption and enforcement of	Flood, Severe Storms		Municipality (via Municipal Engineer/NFIP Floodplain	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. Issue floodplain development permits & monitor construction in floodplain. DEC did a CAV for the town and all



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. 3. If discontinue, explain why.
	floodplain management requirements (e.g. regulating all new and substantially improved construction in Special Hazard Flood Areas), floodplain identification and mapping, and flood insurance outreach to the community. Further, continue to meet and/or exceed the minimum NFIP standards and criteria through the following NFIP-related continued compliance actions identified as Initiatives 7 – 16 (below).			Administrator) with support from NYSOEM, ISO FEMA				deficiencies noted by DEC have been corrected.
						Damages Avoided; Evidence of Success	-	3. Ongoing Capability
8	Begin the process to adopt higher regulatory standards to manage flood risk (i.e. increased freeboard, cumulative substantial damage/improvements).	Flood, Severe Storms	Fire station built in floodplain	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	Complete	Cost	-	1. Discontinue
						Level of Protection	-	2. Adopted Flood Damage Prevention Law in 2012. No critical use facilities allowed to be built in floodplain.
						Damages Avoided; Evidence of Success	-	3. Complete
9	Conduct and facilitate community and public education and outreach for residents and businesses to include, but not be limited to, the following to promote and effect natural hazard risk reduction: Provide and maintain links to the HMP website, and regularly post notices on the County/municipal homepage(s) referencing the HMP webpages. Prepare and distribute	All Hazards	Ongoing capability for the Town – no previous problem identified for this action	Municipality with support from Planning Partners, NYSOEM, FEMA	Ongoing capability	Cost	-	1. Discontinue
						Level of Protection	-	2. County supported, Town website contains information
						Damages Avoided; Evidence of Success	-	3. Ongoing capability



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. 3. If discontinue, explain why.
	informational letters to flood vulnerable property owners and neighborhood associations, explaining the availability of mitigation grant funding to mitigate their properties, and instructing them on how they can learn more and implement mitigation. Use email notification systems and newsletters to better educate the public on flood insurance, the availability of mitigation grant funding, and personal natural hazard risk reduction measures. Work with neighborhood associations, civic and business groups to disseminate information on flood insurance and the availability of mitigation grant funding.							
10	Have designated NFIP Floodplain Administrator (FPA) become a Certified Floodplain Manager through the ASFPD and pursue relevant continuing education training such as FEMA Benefit-Cost Analysis.	Flood, Severe Storms		NFIP Floodplain Administrator	In Progress	Cost		1. Include in 2018 HMP Floodplain Administrator retiring. 2. Encourage incoming Administrator to become certified 3. -
						Level of Protection		
						Damages Avoided; Evidence of Success		
11	Archive elevation certificates	Flood, Severe Storm	Ongoing capability for the Town – no previous problem identified for this action	NFIP Floodplain Administrator	Ongoing capability	Cost		1. Discontinue 2. Archived with floodplain development permit for property 3. Ongoing capability
						Level of Protection		
						Damages Avoided; Evidence of Success		
12	Continue to support the	All Hazards	Ongoing	Municipality	Ongoing	Cost		1. Discontinue



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. 3. If discontinue, explain why.
	implementation, monitoring, maintenance, and updating of this Plan, as defined in Section 7.0		capability for the Town – no previous problem identified for this action	(via mitigation planning point of contacts) with support from Planning Partners (through their Points of Contact), NYSOEM	capability	Level of Protection		2. -  3. Ongoing capability
13	Complete the ongoing updates of the Comprehensive Emergency Management Plans	All Hazards	Ongoing capability for the Town – no previous problem identified for this action	Municipality with support from NYSOEM	Ongoing Capability	Cost	-	1. Discontinue 2. - 3. Town Board will include in town emergency plan
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
14	Create/enhance/ maintain mutual aid agreements with neighboring communities for continuity of operations.	All Hazards	Ongoing capability for the Town – no previous problem identified for this action	Municipality with support from Surrounding municipalities and County	Ongoing Capability	Cost	-	1. Discontinue Town has established shared use agreements with neighboring towns and county. Shared use agreement with Village of Candor for snow removal. 2. - 3. Ongoing capability
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
15	Identify and develop agreements with entities that can provide support with FEMA/SOEM paperwork after disasters; qualified damage assessment personnel – Improve post-disaster capabilities – damage assessment; FEMA/SOEM paperwork compilation, submissions, record-keeping	All Hazards	Ongoing capability for the Town – no previous problem identified for this action	Municipality with support from County, NYSOEM, FEMA	Ongoing Capability	Cost	-	1. Discontinue 2. - 3. Ongoing capability
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
16	Work with regional agencies (i.e. County and SOEM) to help develop damage assessment	All Hazards	Ongoing capability for the Town – no previous	Municipality with support from County, NYSOEM	Ongoing Capability	Cost	-	1. Discontinue 2. - 3. Ongoing capability
						Level of Protection	-	
						Damages	-	



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. 3. If discontinue, explain why.
	capabilities at the local level through such things as training programs, certification of qualified individuals (e.g. code officials, floodplain managers, engineers).		problem identified for this action			Avoided; Evidence of Success		
17	Participate in local, county and/or state level projects and programs to develop improved structure and facility inventories and hazard datasets to support enhanced risk assessment efforts. Such programs may include developing a detailed inventory of critical facilities based upon FEMA's Comprehensive Data Management System (CDMS) which could be used for various planning and emergency management purposes including: Support the performance of enhanced risk and vulnerability assessments for hazards of concern. Support state, county and local planning efforts including mitigation (including updates to the State HMP), comprehensive emergency management, debris management, and land use. Improved structural and facility inventories could incorporate flood, wind and seismic-specific parameters (e.g. first floor elevations, roof types, structure types	All Hazards		HMP Coordinator	In Progress	Cost	-	1. Include in 2018 HMP
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. -



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. 3. If discontinue, explain why.
	based on FEMA-154 "Rapid Visual Screening of Buildings for Potential Seismic Hazards" methodologies). It is recognized that these programs will need to be initiated and supported at the County and/or State level, and will require training, tools and funding provided at the county, state and/or federal level.							
18	Want more funding for additional stormwater installation near town barn in floodplain.	Flood, Severe Storm	Need additional stormwater structures near the town barn	DPW	No Progress	Cost	\$60,000	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. Engineering estimates too expensive to continue
19	Park settlement Rd culvert protection	Flood, Severe Storm	Culvert in this part of the town is in need of protection	DPW	Complete	Cost	\$28,300	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. Complete



### Completed Mitigation Initiatives Not Identified in the Previous Mitigation Strategy

The Town of Candor has performed ongoing maintenance projects to reduce the impact of flooding but has not identified specific mitigation projects/activities that have been completed but were not identified in the previous mitigation strategy in the 2013 Plan.

### Proposed Hazard Mitigation Initiatives for the Plan Update

The Town of Candor participated in a mitigation action workshop on July 11, 2018 and was provided the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 ‘Selecting Appropriate Mitigation Measures for Floodprone Structures’ (March 2007) and FEMA ‘Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards’ (January 2013).

Table 9.4-12 summarizes the comprehensive-range of specific mitigation initiatives the Town of Candor would like to pursue in the future to reduce the effects of hazards. Some of these initiatives may be previous actions carried forward for this plan update. These initiatives are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. The four FEMA mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

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

Table 9.4-13 provides a summary of the prioritization of all proposed mitigation initiatives for the Plan update.



**Table 9.4-12. Proposed Hazard Mitigation Initiatives**

Project Number	Project Name	Description of the Problem	Description of the Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues?	Estimated Timeline	Lead and Support Agencies	Estimated Cost	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category
Town of Candor – 1 (former 1)	Catatonk Creek Levee Study	See Action Worksheet	See Action Worksheet	Flood	1-1, 6-2	No	No	2 years	Candor Central School District as Lead agency. The Village of Candor & the Town of Candor as support agencies	High	High	PDM, HMGP, local operating budget cost share	High	LPR
Town of Candor -2	Enlarge Four Culverts - Whitmarsh Hollow & Back West Creek Roads	See Action Worksheet	See Action Worksheet	Flood	1-1, 6-2	No	No	3 years	Town Highway Department	\$185,000	Damage to roads and ditches will be avoided.	PDM, HMGP, local operating budget cost share	High	SIP
Town of Candor-3	Document Erosion Threat to Rt 93B	See Action Worksheet	See Action Worksheet	Flood	1, 6	No	No	One Year	Town Highway Department (lead) SWCD supporting	No Cost	Potentially could be a mitigation action by NYSDOT that would avoid damages to the highway exceed \$1M.	Municipal Budget	Medium	LPR, NSP
Town of Candor – 4 (former 3)	Portable storage pods	The Town does not have emergency response supplies	Purchase emergency response goods, cots, bedding, sanitary, & other recommended items.	All	6-2	No	No	1 year	Town Board	\$100,000	Provide essential supplies to community during a hazard event	Municipal Budget	Medium	LPR
Town of Candor – 5 (former)	Upper Candor Dam Rehabilitation Project Catatonk Creek	Significant water seepage under the dam. DEC has issued a	Cut and remove concrete from a portion of the top of the dam.	Flood	1-1, 6-2	No	No	5 years	Town of Candor in conjunction with the Village of	\$1.3 million	Repairs will prevent potential failure of the dam	FEMA HMGP	Medium	SIP





## Section 9.4: Town of Candor

Project Number	Project Name	Description of the Problem	Description of the Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues?	Estimated Timeline	Lead and Support Agencies	Estimated Cost	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category
4)		violation notice requiring repairs to the dam to be in compliance.	Install 15' steel sheetpiles and replace concrete. Install 9' sheetpiles below the dam, extend apron with rip rap & place grout between the joints. Remove debris below the dam & place rip rap on banks to prevent erosion.						Candor as the dam is located in the village		which could cause flooding and damage to critical use facilities (Fire station, school & health care facility)			
Town of Candor – 6 (former 5)	Critical Facilities in Floodplain	Weltonville Fire Station, Candor Main Station and the Ward Street Well 1 are critical facilities located in the floodplain and may be at risk to flood damages after a heavy rain event.	Work with facility owners / operators and inform them they are located in the floodplain and determine if the structures are mitigated to the 500-year flood level.	Flood, Severe Storm	1-1, 1-2, 1-9	Yes	No	5 years	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	<\$100,000	Determine if facilities need to be mitigated, protect buildings, allow for continuity of operations	Municipal Budget	Medium	SIP
Town of Candor – 7 (former 6)	Repetitive Loss Properties	There is one repetitive loss property in the Town	Work with the property owner, informing them they are in the floodplain and identified as a repetitive loss property. Determine the best mitigation	Flood, Severe Storm	1-1, 1-2, 1-9	No	No	5 years	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	<\$100,000	Public education, protect structure from flood damages	Municipal Budget	Medium	SIP



## Section 9.4: Town of Candor

Project Number	Project Name	Description of the Problem	Description of the Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues?	Estimated Timeline	Lead and Support Agencies	Estimated Cost	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category
			action to protect the property.											
Town of Candor – 8 (former 10)	Floodplain Administrator Education	The Floodplain Administrator is not a Certified Floodplain Manager	Have incoming NFIP Floodplain Administrator (FPA) become a Certified Floodplain Manager through the ASFPM and pursue relevant continuing education training such as FEMA Benefit-Cost Analysis.	Flood, Severe Storm	1-6, 1-8	No	No	Less than 5 years	NFIP Floodplain Administrator	<\$10,000	Increase knowledge and training of municipal FPA	Municipal Budget	Medium	EAP
Town of Candor – 9 (former 13)	Update of Comprehensive Emergency Plan	The Town Board is currently not involved in the update of the Comprehensive Emergency Management Plan	Include the Town Board in the completion of the ongoing updates of the Comprehensive Emergency Management Plans.	All Hazards	1-1, 1-7, 3-1, 5-1, 6-2, 6-3, 6-4	No	No	Ongoing	Town Board	<\$10,000	Provide input from Town Board in planning mechanisms	Municipal Budget	Medium	LPR
Town of Candor – 10 (former 17)	Participation in programs to develop improved structure and facility inventories	While the Town does provide support to federal, state and county agencies, their participation can be improved and enhanced to increase the village's capabilities.	Working with federal, state and county agencies, the Town will support the performance of enhanced risk and vulnerability assessments for hazards of concern; support the update of the	All	1, 2, 5	No	No	Within 5 Years	Town Board	<\$10,000	Enhance relationship with federal, state and county agencies;	Municipal Budget, FEMA HMA grants where applicable	Medium	LPR



Project Number	Project Name	Description of the Problem	Description of the Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues?	Estimated Timeline	Lead and Support Agencies	Estimated Cost	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category
			County's CEMP and HMP; and update their infrastructure inventories to incorporate flood and wind parameters.											

Notes:

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

**Acronyms and Abbreviations:**

CAV	Community Assistance Visit
CRS	Community Rating System
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
FPA	Floodplain Administrator
HMA	Hazard Mitigation Assistance
N/A	Not applicable
NFIP	National Flood Insurance Program
OEM	Office of Emergency Management

**Potential FEMA HMA Funding Sources:**

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

**Timeline:**

The time required to complete the project

**Cost:**

Estimated costs associated with implementation

**Benefits:**

The benefits that implementation of this project will provide.

**Mitigation Category:**

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

**Critical Facility:**

- Yes ☑ - Critical Facility located in 1% floodplain

Table 9.4-13. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
Town of Candor – 1 (former 1)	Catatonk Creek Levee Study	1	1	1	1	1	1	0	1	1	0	0	1	0	0	9	High
Town of Candor -2	Enlarge Four Culverts - Whitmarsh Hollow & Back West Creek Roads	1	1	1	1	0	1	0	1	1	0	1	1	0	0	9	High
Town of Candor-3	Document Erosion Threat to Rt 93B	1	1	1	1	0	0	1	0	0	1	1	1	0	0	8	Medium
Town of Candor – 4 (former 3)	Portable storage pods	1	1	1	1	0	0	0	0	1	1	1	1	0	0	8	Medium
Town of Candor – 5 (former 4)	Upper Candor Dam Rehabilitation Project Catatonk Creek	1	1	1	1	0	0	0	1	1	0	1	1	0	0	8	Medium
Town of Candor – 6 (former 5)	Critical Facilities in Floodplain	1	1	1	1	0	0	1	0	0	1	0	1	0	0	7	Medium
Town of Candor – 7 (former 6)	Repetitive Loss Properties	1	1	1	1	0	0	1	0	0	1	0	1	0	0	7	Medium
Town of Candor – 8 (former 10)	Floodplain Administrator Education	1	1	1	1	0	0	1	0	0	1	0	1	0	0	7	Medium
Town of Candor – 9 (former 13)	Update of Comprehensive Emergency Plan	1	1	1	1	0	0	1	0	0	1	1	1	0	0	8	Medium
Town of Candor – 10 (former 17)	Participation in programs to develop improved structure and facility inventories	1	1	1	1	0	0	1	0	0	1	0	1	0	0	7	Medium

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



#### **9.4.7 Future Needs To Better Understand Risk/Vulnerability**

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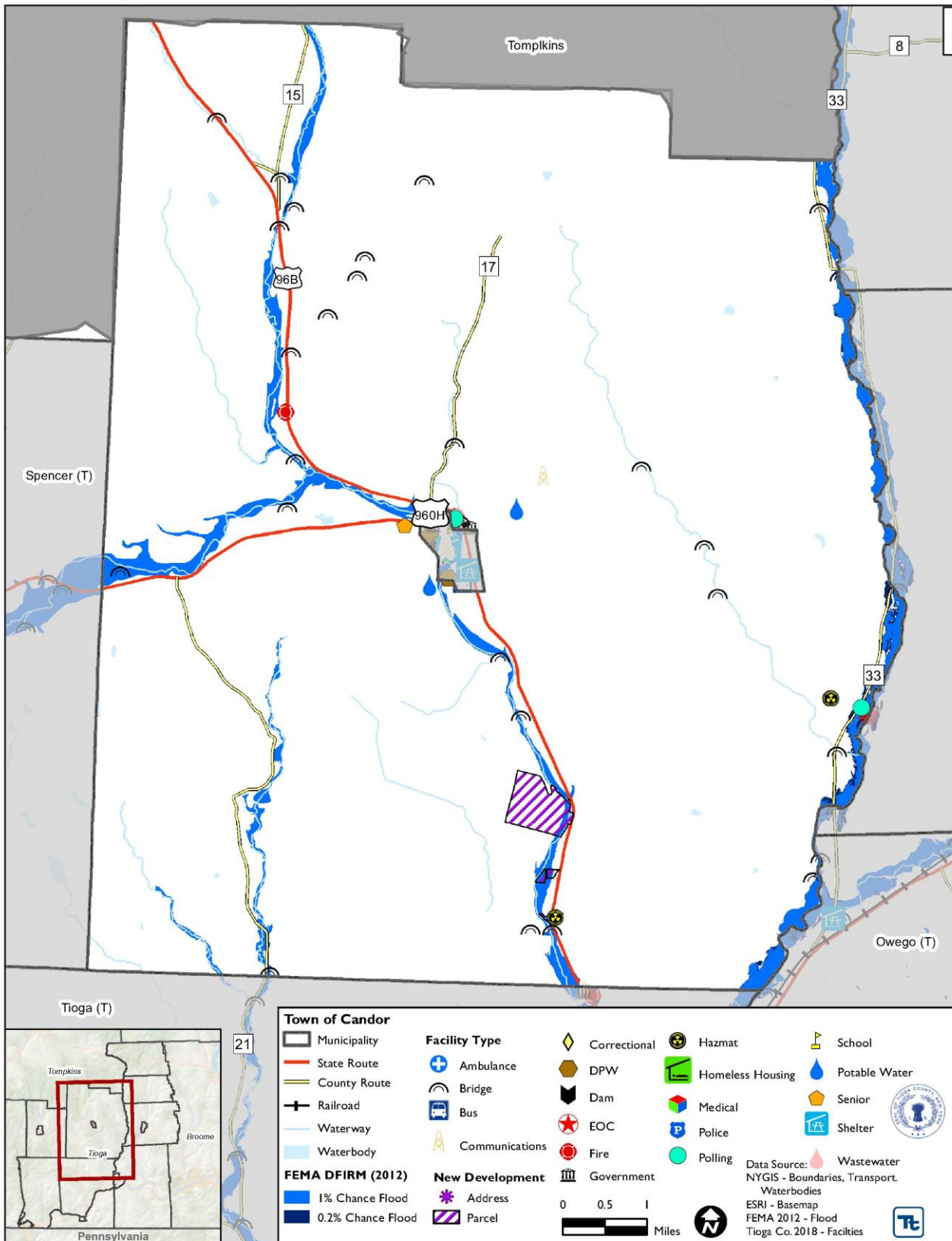
None at this time.

#### **9.4.8 Hazard Area Extent and Location**

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Hazard area extent and location maps have been generated for the Town of Candor that illustrate the probable areas impacted within the municipality. These maps are based on the best available data at the time of the preparation of this plan and are considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the Town of Candor has significant exposure. These maps are illustrated in the hazard profiles within Section 5.4, Volume I of this Plan. A map of the Town of Candor Hazard Area Extent and Location is provided on the following page. This map indicates the location of the regulatory floodplain as well as identified critical facilities within the municipality.

Figure 9.4-1. Town of Candor Hazard Area Extent and Location





Town of Candor Action Worksheet			
<b>Project Name:</b>	Catatunk Creek Levee Study		
<b>Project Number:</b>	Town of Candor - 1		
<b>Risk / Vulnerability</b>			
<b>Hazard(s) of Concern:</b>	Flood		
<b>Description of the Problem:</b>	The Catatunk Creek in the Town of Candor is prone to flooding in the area above the upper dam and extending past the town barns to Humiston Street. The Candor Fire Department station is located in this area was rendered inoperable in 2011 (Tropical Storm Lee) when flood waters surrounded the station. In addition, the Creek bank is eroding and approaching State Route 93B; the Candor Central School has flooded, and a primary care medical office is in jeopardy. The school serves as a Red Cross Shelter.		
<b>Action or Project Intended for Implementation</b>			
<b>Description of the Solution:</b>	Conduct a flood study of the Catatunk Creek in the Town of Candor covering the area from about the upper dam to Humiston Street, to determine the feasibility of a levee or other solution to protect the fire station from a 0.02 % flood event, as well as other structures in the area		
<b>Is this project related to a Critical Facility?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
<b>Is this project related to a Critical Facility located within the 100-year floodplain?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
<b>Level of Protection:</b>	0.2% flood [500-year flood]	<b>Estimated Benefits (losses avoided):</b>	Avoid loss of fire services and damage to school, state highway, and primary care facility
<b>Useful Life:</b>	50 years		
<b>Estimated Cost:</b>	Study - \$100,000		
<b>Plan for Implementation</b>			
<b>Prioritization:</b>	Tier 1 (Highest Level Priority)	<b>Desired Timeframe for Implementation:</b>	3 years to secure funding
<b>Estimated Time Required for Project Implementation:</b>	6-12 month to complete study	<b>Potential Funding Sources:</b>	NYS Dept of State Resiliency Grant
<b>Responsible Organization:</b>	Supervisor's Office	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	NA
<b>Three Alternatives Considered (including No Action)</b>			
<b>Alternatives:</b>	<b>Action</b>	<b>Estimated Cost</b>	<b>Evaluation</b>
	No Action	\$0	Unacceptable
	Relocate Fire Station	\$2 - \$3 million	Too costly; would diminish response times for fires as the current location is central.
	Rip Rap Streambank	\$ 300,000 - \$400,000	Beneficial (see Action 3), but only solves part of the problem.
<b>Progress Report (for plan maintenance)</b>			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			



Town of Candor Action Worksheet		
<b>Project Name:</b>	Catatonk Creek Levee Study	
<b>Project Number:</b>	Town of Candor 1	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
<b>Life Safety</b>	1	Proposed mitigation will reduce risk to the Candor Fire Department, which is an emergency service. It will also reduce risk to the Candor Central School which is operated as an emergency shelter.
<b>Property Protection</b>	1	Flooding affects Candor Fire Department, Candor Central School, and a primary care medical office.
<b>Cost-Effectiveness</b>	1	
<b>Technical</b>	1	The technical requirements of this project are feasible to implement.
<b>Political</b>	1	
<b>Legal</b>	1	Project area is located within the Town of Candor
<b>Fiscal</b>	0	
<b>Environmental</b>	1	Catatonk Creek bank is eroding, and flooding has a significant impact on
<b>Social</b>	1	This mitigation action will benefit by allowing emergency services and emergency shelters to be operating should an emergency situation arise within the Town of Candor.
<b>Administrative</b>	0	
<b>Multi-Hazard</b>	0	
<b>Timeline</b>	1	Project can be completed within 5 years
<b>Agency Champion</b>	0	
<b>Other Community Objectives</b>	0	
<b>Total</b>	9	
<b>Priority (High/Med/Low)</b>	High	





Town of Candor Action Worksheet			
<b>Project Name:</b>	Enlarge Four Culverts - Whitmarsh Hollow & Back West Creek Roads		
<b>Project Number:</b>	Town of Candor - 2		
<b>Risk / Vulnerability</b>			
<b>Hazard(s) of Concern:</b>	Flood		
<b>Description of the Problem:</b>	Whitmarsh Hollow Road and Back West Creek Road are in low lying areas where flood waters overwhelm four culverts - 1 on Whitmarsh Hollow Road and 3 on Back West Creek Road. As a result of the culverts being overwhelms, the following damage occurs: With heavy rain the existing culverts are too small to handle the volume of water. The excess water overflows the banks onto the road causing erosion and damage to the road and ditches. Whitmarsh Hollow repairs would require closure of the road. The detour would affect 60 households and up to 150-200 vehicles daily. The travel distance due to the detour would be as much as 8 miles and West Creek Road repairs would require closure of the road for several days.		
<b>Action or Project Intended for Implementation</b>			
<b>Description of the Solution:</b>	Increase the capacity of 1 culvert (cross over pipe enlarged 7") on Whitmarsh Hollow Road 9/10 of a mile from Catatunk Rd. near house # 155. 3 culverts (cross over pipes enlarged to 7") on Back West Creek Road. From the South end of W. creek Rd & Back W. Creek road intersection 1.7 miles house # 343, 2.1 miles house # 431 & 4 miles house # 825.		
<b>Is this project related to a Critical Facility?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
<b>Is this project related to a Critical Facility located within the 100-year floodplain?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
<b>Level of Protection:</b>	1% flood event (100-year flood)	<b>Estimated Benefits (losses avoided):</b>	Damage to roads and ditches will be avoided.
<b>Useful Life:</b>	30 years		
<b>Estimated Cost:</b>	\$185,000		
<b>Plan for Implementation</b>			
<b>Prioritization:</b>	Tier 1 (Highest Level Priority)	<b>Desired Timeframe for Implementation:</b>	3 years to secure funding
<b>Estimated Time Required for Project Implementation:</b>	1-2 Months	<b>Potential Funding Sources:</b>	FEMA Mitigation Grant
<b>Responsible Organization:</b>	Town Highway Department	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	NA
<b>Three Alternatives Considered (including No Action)</b>			
<b>Alternatives:</b>	<b>Action</b>	<b>Estimated Cost</b>	<b>Evaluation</b>
	No Action	\$0	
	Cofferdams to slow the flow of water before reaching the culverts	Moderate Cost	Not deemed to be effective as terrain is flat
	Detention Ponds to slow the flow of water before reaching the culverts	Moderate Cost	Not deemed to be effective as terrain is flat
<b>Progress Report (for plan maintenance)</b>			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			



Town of Candor Action Worksheet		
<b>Project Name:</b>	Enlarge Four Culverts - Whitmarsh Hollow & Back West Creek Roads	
<b>Project Number:</b>	Town of Candor - 2	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
<b>Life Safety</b>	1	Reduced flooding on roadway can
<b>Property Protection</b>	1	Project will prevent damage to road surface and nearby ditches sustained during flood events.
<b>Cost-Effectiveness</b>	1	Proposed project will reduce cost of repetitive maintenance following flood events
<b>Technical</b>	1	The technical requirements of this project are feasible to implement.
<b>Political</b>	0	
<b>Legal</b>	1	Project area is located within the Town of Candor
<b>Fiscal</b>	0	
<b>Environmental</b>	1	Increased culvert size will reduce flood damage and erosion to surrounding area
<b>Social</b>	1	
<b>Administrative</b>	0	
<b>Multi-Hazard</b>	1	Project can reduce effects of flooding and erosion
<b>Timeline</b>	1	Project can be completed within 5 years.
<b>Agency Champion</b>	0	
<b>Other Community Objectives</b>	0	
<b>Total</b>	9	
<b>Priority (High/Med/Low)</b>	High	



Town of Candor Action Worksheet			
<b>Project Name:</b>	Document Erosion Threat to Rt 93B		
<b>Project Number:</b>	Town of Candor - 3		
<b>Risk / Vulnerability</b>			
<b>Hazard(s) of Concern:</b>	Flooding / Streambank Erosion		
<b>Description of the Problem:</b>	The Catatonk Creek in the Town of Candor is prone to flooding and the streambank is eroding, threatening State Route 93B near the Candor Fire Department. The stream is about 20' from the highway and eventually will reach the highway. Stabilizing the streambank would be the responsibility of the NYS Department of Transportation (NYSDOT) because the work would encroach on the State right-of-way. The Town of Candor cannot act directly to stabilize the streambank even though damage to the highway would affect the residents of the Town of Candor who use this transportation facility.		
<b>Action or Project Intended for Implementation</b>			
<b>Description of the Solution:</b>	Complete a report to fully document this problem and present it to NYSDOT with a recommendation to stabilize the streambank with rip rap.		
<b>Is this project related to a Critical Facility?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
<b>Is this project related to a Critical Facility located within the 100-year floodplain?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
<b>Level of Protection:</b>	Up to a 100-year flood event	<b>Estimated Benefits (losses avoided):</b>	Potentially could precipitate a mitigation action by NYSDOT that would avoid damages to the highway exceed \$1M.
<b>Useful Life:</b>	30-50 years		
<b>Estimated Cost:</b>	Study - NA (in-house with SWCD)		
<b>Plan for Implementation</b>			
<b>Prioritization:</b>	Tier 3	<b>Desired Timeframe for Implementation:</b>	3-12 month to begin preparation of a report.
<b>Estimated Time Required for Project Implementation:</b>	Report would take 1-2 months for prepare	<b>Potential Funding Sources:</b>	Current budget
<b>Responsible Organization:</b>	Town Highway Department (lead) SWCD supporting	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	NA
<b>Three Alternatives Considered (including No Action)</b>			
<b>Alternatives:</b>	<b>Action</b>	<b>Estimated Cost</b>	<b>Evaluation</b>
	No Action	\$0	Could lead to no NYSDOT action and eventually the highway would fail.
	Speak to the NYSDOT	\$ very low	Not likely to be effective
	Construct a levee for upper dam to Humiston Street	High Cost	Project will take years to complete because a study is needed first.
<b>Progress Report (for plan maintenance)</b>			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			



Town of Candor Action Worksheet		
<b>Project Name:</b>	Document Erosion Threat to Rt 93B	
<b>Project Number:</b>	Town of Candor - 3	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	Streambank stabilization can reduce risk to NY Route 93B
Cost-Effectiveness	1	Low cost of a project and potential mitigation
Technical	1	Technical requirements of this project are feasible to implement.
Political	0	
Legal	0	Responsibility of NYS DOT
Fiscal	1	Source of funding is from Candor Budget
Environmental	0	
Social	0	
Administrative	1	Soil and Water Conservation District can document the erosion issues.
Multi-Hazard	1	Flooding, Streambank erosion
Timeline	1	This project can be completed within 5 years.
Agency Champion	0	
Other Community Objectives	0	
<b>Total</b>	8	
<b>Priority (High/Med/Low)</b>	Medium	

## 9.5 VILLAGE OF CANDOR

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



**2010 Population: 851**  
**Population in 100 year Floodplain (SFHA): 111**

**Land Area: 294.4 acres**  
**Land Area in Floodplain: 18.8%**  
**NFIP policies: 4**  
**NFIP Policies in SFHA: 4**  
**NFIP Claims: 10**  
**Total NFIP Losses: \$211,034**



**Number of Buildings: 381**  
**Total Replacement Building Value: \$129.2 million**  
**Number of Buildings in the SFHA: 25**  
**Total Replacement Building Value Exposed in the SFHA: \$9.7million**

**Mitigation Focus**  
**Multi Hazard**



### 9.5.1 Hazard Mitigation Plan Point of Contact

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

Primary Point of Contact	Alternate Point of Contact
Eric Halstead, Mayor Phone: 607-592-0553 Email: enphalstead@outlook.com	Gary Consalvi, Village Trustee Phone: 607-659-7966 Email: gary_consalvi@yahoo.com

### 9.5.2 Municipal Profile

The Village of Candor is located within the Town of Candor in Tioga County, New York. The village is centrally located in the town and is south of Ithaca, NY. According to the United States Census Bureau, the village has a total area of 0.4 square miles (1.1 km<sup>2</sup>). Candor is at the junction of New York State Route 96 and New York State Route 96B (Ithaca Road). County Road 103 enters the village from the north. The Catatonk Creek flows past the village.

The first settlers arrived around 1794. In 1813 a fire burned much of the community. The source and meaning of the village name is not known. The community was formed from the consolidation of the neighboring communities of Candor Center and Candor Corners. The village was incorporated in 1900.

The village is governed by the village mayor and Board of Trustees. According to the 2010 Census, the community's population was 851.

### Growth/Development Trends

The Village of Candor did not note any recent residential/commercial development since 2012 or any major residential or commercial development, or major infrastructure development planned for the next five years in the municipality.

**Table 9.5-1. Growth and Development**

Property or Development Name	Type (e.g. Res., Comm.)	# of Units / Structures	Location (address and/or Parcel ID)	Known Hazard Zone(s)	Description/Status of Development
<b>Recent Development from 2012 to present</b>					
None					
<b>Known or Anticipated Development in the Next Five (5) Years</b>					
None					

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

### 9.5.3 Natural Hazard Event History Specific to the Municipality

Tioga County has a history of natural and non-natural hazard events as detailed in Volume I, Section 5.0 of this plan. A summary of historical events is provided in each of the hazard profiles and includes a chronology of events that have affected the County and its municipalities. For the purpose of this plan update, events that have occurred in the County from 2012 to December 31, 2017 were summarized to indicate the range and impact of hazard events in the community. Information regarding specific damages is included, if available, based on reference material or local sources. This information is presented in the table below. For details of these and additional events, refer to Volume I, Section 5.0 of this plan.

Table 9.5-2. Hazard Event History

Dates of Event	Event Type (Disaster Declaration if applicable)	Tioga County Designated?	Summary of Damages/Losses
September 2011	Remnants of Tropical Storm Lee (DR-4031)	Yes	Buildings flooded; coal barn flooded

Notes:

EM Emergency Declaration (FEMA)

FEMA Federal Emergency Management Agency

DR Major Disaster Declaration (FEMA)

N/A Not applicable

### 9.5.4 Hazard Vulnerabilities and Ranking

The hazard profiles in Section 5.0 of this plan have detailed information regarding each plan participant's vulnerability to the identified hazards. This section provides a summary of exposure and impacts from significant hazards of concern as identified by the Village of Candor. For additional vulnerability information relevant to this jurisdiction, refer to Section 5.0.

#### Hazard Risk Ranking

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

As discussed in Section 5.3 (Hazard Ranking), each participating town or village may have differing degrees of risk exposure and vulnerability compared to Tioga County as a whole. Therefore, each municipality ranked the degree of risk to each hazard as it pertains to their community. The table below summarizes the hazard risk/vulnerability rankings of potential natural hazards for the Village of Candor. Village of Candor has reviewed the County hazard risk/vulnerability risk ranking table as well as its individual results to reflect the relative risk of the hazards of concern to the community.

Table 9.5-3. Hazard Risk/Vulnerability Risk Ranking

Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard <sup>a, b, c</sup>		Probability of Occurrence	Hazard Ranking
Drought	Damage estimate not available		Frequent	Medium
Flood	RCV Exposed to 1% Annual Chance Flood Event	\$23,308,000	Frequent	Medium
Severe Storm	100-year MRP	\$0	Frequent	High
	500-year MRP	<\$1,000		
Severe Winter Weather	1% GBS	\$783,200	Frequent	High
	5% GBS	\$3,916,000		

Notes:

a. Building damage ratio estimates based on FEMA 386-2 (August 2001)



- b. Loss estimates for the severe storm and severe winter storm hazards are structural values only and do not include the value of contents.
- c. Loss estimates for the flood hazard represents both structure and contents.

### National Flood Insurance Program (NFIP) Summary

The following table summarizes the NFIP statistics for the Village of Candor.

**Table 9.5-4. NFIP Summary**

Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 100- year Boundary (3)
Candor (V)	4	10	\$211,034.00	1	0	4

Source: FEMA 2018

1. Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA and are current as of February 28, 2018 and are summarized by Community Name. Please note the total number of repetitive loss properties excludes the severe repetitive loss properties. The number of claims represents claims closed by 2/28/2018. Total building and content losses from the claims file provided by FEMA Region 2.
2. Total building and content losses from the claims file provided by FEMA Region 2.

### Critical Facilities Flood Risk

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

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

**Table 9.5-5. Potential Flood Losses to Critical Facilities**

Name	Type	Exposure		Potential Loss from 1% Flood Event		Addressed by Proposed Action
		1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	
None Identified						

Source: Tioga County GIS, FEMA 2012, and Hazus 4.2

### Identified Issues

The municipality has identified the following vulnerabilities within their community:

- None

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

- Owego Village, Candor village/school, Tioga Center, Waverly, areas near the river and tributaries.





### 9.5.5 Capability Assessment

This section identifies the following capabilities of the local jurisdiction:

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

#### Planning and Regulatory Capability

The table below summarizes the regulatory tools that are available to the Village of Candor.

**Table 9.5-6. Planning and Regulatory Tools**

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
<b>Planning Capability</b>				
Comprehensive Plan	No	-	-	-
Capital Improvements Plan	No	-	-	-
Floodplain Management / Basin Plan	Yes	Local	Town Code Enforcement	Town of Candor
Stormwater Management Plan	No	-	-	-
Open Space Plan	No	-	-	-
Stream Corridor Management Plan	No	-	-	-
Watershed Management or Protection Plan	No	-	-	-
Economic Development Plan	No	-	-	-
Comprehensive Emergency Management Plan	No	-	-	-
Emergency Operation Plan	No	-	-	-
Post-Disaster Recovery Plan	No	-	-	-
Transportation Plan	No	-	-	-
Strategic Recovery Planning Report	No	-	-	-
Other Plans:	No	-	-	-
<b>Regulatory Capability</b>				
Building Code	Yes	State & Local	Village Code Enforcement	New York State
Zoning Ordinance	No	-	-	-
Subdivision Ordinance	No	-	-	-
NFIP Flood Damage Prevention Ordinance	Yes	Federal, State, Local	Village Code Enforcement	Village Flood Damage Prevention Ordinance
NFIP: Cumulative Substantial Damages	No	-	-	-

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
NFIP: Freeboard	Yes	State, Local	Village Code Enforcement	State mandated BFE+2 for single and two-family residential construction, BFE+1 for all other construction types
Growth Management Ordinances	No	-	-	-
Site Plan Review Requirements	No	-	-	-
Stormwater Management Ordinance	No	-	-	-
Municipal Separate Storm Sewer System (MS4)	No	-	-	-
Natural Hazard Ordinance	No	-	-	-
Post-Disaster Recovery Ordinance	No	-	-	-
Real Estate Disclosure Requirement	Yes	State	-	NYS mandate, Property Condition Disclosure Act, NY Code - Article 14 §460-467
Other (Special Purpose Ordinances [i.e., sensitive areas, steep slope])	No	-	-	-

### Administrative and Technical Capability

The table below summarizes potential staff and personnel resources available to the Village of Candor.

**Table 9.5-7. Administrative and Technical Capabilities**

Resources	Is this in place? (Yes or No)	Department/ Agency/Position
<b>Administrative Capability</b>		
Planning Board	No	-
Mitigation Planning Committee	No	-
Environmental Board/Commission	No	-
Open Space Board/Committee	No	-
Economic Development Commission/Committee	No	-
Maintenance Programs to Reduce Risk	No	-
Mutual Aid Agreements	No	-
<b>Technical/Staffing Capability</b>		
Planner(s) or engineer(s) with knowledge of land development and land management practices	No	-
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	Yes	Code Enforcement
Planners or engineers with an understanding of natural hazards	No	-
NFIP Floodplain Administrator (FPA)	Yes	Code Enforcement
Surveyor(s)	No	-

Resources	Is this in place? (Yes or No)	Department/ Agency/Position
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	No	-
Scientist familiar with natural hazards	No	-
Emergency Manager	No	-
Grant writer(s)	No	-
Staff with expertise or training in benefit/cost analysis	No	-
Professionals trained in conducting damage assessments	No	-

### Fiscal Capability

The table below summarizes financial resources available to the Village of Candor.

**Table 9.5-8. Fiscal Capabilities**

Financial Resources	Accessible or Eligible to Use (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	Yes
Capital improvements 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	No
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	Yes
Other	No

### Community Classifications

The table below summarizes classifications for community program available to the Village of Candor.

**Table 9.5-9. Community Classifications**

Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	No	-	-
NYSDEC Climate Smart Community	No	-	-
Storm Ready Certification	No	-	-

Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Firewise Communities classification	No	-	-
Natural disaster/safety programs in/for schools	No	-	-
Organizations with mitigation focus (advocacy group, non-government)	No	-	-
Public education program/outreach (through website, social media)	No	-	-
Public-private partnership initiatives addressing disaster-related issues	No	-	-

Note:

N/A Not applicable  
NP Not participating  
- Unavailable

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

Criteria for classification credits are outlined in the following documents:

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

### Self-Assessment of Capability

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

**Table 9.5-10. Self-Assessment Capability for the Municipality**

Area	Degree of Hazard Mitigation Capability		
	Limited (If limited, what are your obstacles?)*	Moderate	High
Planning and regulatory capability		X	
Administrative and technical capability		X	
Fiscal capability		X	
Community political capability		X	

Area	Degree of Hazard Mitigation Capability		
	Limited (If limited, what are your obstacles?)*	Moderate	High
Community resiliency capability		X	
Capability to integrate mitigation into municipal processes and activities		X	

## National Flood Insurance Program

### NFIP Floodplain Administrator (FPA)

Town of Candor Code Enforcement

### Flood Vulnerability Summary

The Town of Candor's Code Enforcement provides floodplain administration to the Village of Candor. The most recent compliance audit was conducted on April 4, 2007, according to NYSDEC records.

### Resources

The Village has designated the NFIP Floodplain Administrator (FPA) to become a Certified Floodplain Manager through the ASFPM, and pursue relevant continuing education training such as FEMA Benefit-Cost Analysis.

### Compliance History

The Village maintains compliance with and good-standing in the NFIP including adoption and enforcement of floodplain management requirements (e.g. regulating all new and substantially improved construction in Special Hazard Flood Areas), floodplain identification and mapping, and flood insurance outreach to the community. The Village is working to adopt higher regulatory standards to manage flood risk (i.e. increased freeboard, cumulative substantial damage/improvements).

### Regulatory

The Village of Candor archives elevation certificates.

## Integration of Hazard Mitigation into Existing and Future Planning Mechanisms

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

### Planning

**Tioga County Hazard Mitigation Plan:** The Village of Candor supports the implementation, monitoring, maintenance, and updating of this Plan.

**Comprehensive Emergency Management Plans:** The Village of Candor is dedicated to completing ongoing updates of the Comprehensive Emergency Management Plans.

## Operational and Administration

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**Mutual Aid Agreements:** The Village works to establish agreements with entities that can provide support with FEMA/SOEM paperwork after disasters; qualified damage assessment personnel, improved post-disaster capabilities, FEMA/SOEM paperwork compilation, submissions, and record-keeping.

**Damage Assessments:** The Village works with regional agencies (i.e. County and SOEM) to help develop damage assessment capabilities at the local level through such things as training programs, certification of qualified individuals (e.g. code officials, floodplain managers, engineers).

**Retrofit and Purchase of Structures in Hazard-Prone Areas:** Where appropriate, the Village of Candor supports the retrofitting, purchase, or relocation of structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority. The Village works to identify facilities that are viable candidates for each strategy based on cost-effectiveness. Implementation of these actions are based on available funding.

**Inventories, Datasets, and Vulnerability Assessments:** The Village participates in local, county and/or state level projects and programs to develop improved structure and facility inventories and hazard datasets to support enhanced risk assessment efforts. Such programs may include developing a detailed inventory of critical facilities based upon FEMA's Comprehensive Data Management System (CDMS) which could be used for various planning and emergency management purposes including supporting the performance of enhanced risk and vulnerability assessments for hazards of concern and supporting state, county and local planning efforts including mitigation (including updates to the State HMP), comprehensive emergency management, debris management, and land use.

Improved structural and facility inventories could incorporate flood, wind and seismic-specific parameters (e.g. first floor elevations, roof types, structure types based on FEMA-154 "Rapid Visual Screening of Buildings for Potential Seismic Hazards" methodologies). It is recognized that these programs will need to be initiated and supported at the County and/or State level, and will require training, tools and funding provided at the county, state and/or federal level.

## Education and Outreach

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The Village of Candor conducts and facilitates community and public education and outreach for residents and businesses to include, but not be limited to, the following to promote and effect natural hazard risk reduction:

- Provide and maintain links to the HMP website, and regularly post notices on the County/municipal homepage(s) referencing the HMP webpages.
- Prepare and distribute informational letters to flood vulnerable property owners and neighborhood associations, explaining the availability of mitigation grant funding to mitigate their properties, and instructing them on how they can learn more and implement mitigation.
- Use email notification systems and newsletters to better educate the public on flood insurance, the availability of mitigation grant funding, and personal natural hazard risk reduction measures.
- Work with neighborhood associations, civic and business groups to disseminate information on flood insurance and the availability of mitigation grant funding.

## Sheltering, Evacuation, and Temporary Housing

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



Tioga County, through a buildable land analysis, has identified areas suitable for placing temporary and permanent housing. Refer to Section 4.7.5 in Section 4 (County Profile) of Volume 1 of this plan for a description of resources identified by the county to support municipalities with the identification of evacuation, sheltering, and temporary and permanent housing. Each year, during the annual HMP progress meeting, the municipality will discuss their progress in identifying shelters, evacuation routes, and temporary and permanent housing for their community.

### Temporary and Permanent Housing

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The Village of Candor does not have any areas for temporary housing or sites suitable for permanent relocation of homes after a disaster.

### Evacuation and Sheltering Needs

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The Village does not have village-specific evacuation procedures. The Village does not have any locations suitable for shelters.

## 9.5.6 Mitigation Strategy and Prioritization

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

### Past Mitigation Initiative Status

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

Table 9.5-11. Status of Previous Mitigation Actions

Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
1	Flood wall or Levee to protect areas along the Catatonk Creek from flooding. Starting above the upper dam and extending past the Town Barns on Humiston Street.	Flood		Central School District as Lead agency. The Village of Candor & the Town of Candor as support agencies	No Progress	Cost	-	1. Include in 2018 HMP
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. -
2	Retrofit structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority. Address Candor Family Care, Candor Elementary School, Candor High School, Candor Emergency Squad.  Phase 1: Identify appropriate candidates for retrofitting based on cost-effectiveness versus relocation.  Phase 2: Where retrofitting is determined to be a viable option, work with property owners toward implementation of that action based on available funding from FEMA and local match availability.	Flood, Severe Storm, Earthquake		Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. This is an ongoing capability for the Village and is part of their day-to-day activities. Therefore, it will not be included in the 2018 HMP Update.
3	Purchase, or relocate structures located in hazard-prone areas to protect structures from future damage, with repetitive loss	Flood, Severe Storm		Municipality (via Municipal Engineer/NFIP Floodplain Administrator)	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. This is an ongoing capability for the Village and is part of their day-to-day



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
	and severe repetitive loss properties as priority.  Phase 1: Identify appropriate candidates for relocation based on cost-effectiveness versus retrofitting.  Phase 2: Where relocation is determined to be a viable option, work with property owners toward implementation of that action based on available funding from FEMA and local match availability.			with support from NYSOEM, FEMA		Evidence of Success		activities. Therefore, it will not be included in the 2018 HMP Update.
4	Maintain compliance with and good-standing in the NFIP including adoption and enforcement of floodplain management requirements (e.g. regulating all new and substantially improved construction in Special Hazard Flood Areas), floodplain identification and mapping, and flood insurance outreach to the community.  Further, continue to meet and/or exceed the minimum NFIP standards and criteria through the following NFIP-related continued compliance actions identified as Initiatives 5 – 13 (below).	Flood, Severe Storms		Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, ISO FEMA	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. This is an ongoing capability for the Village and is part of their day-to-day activities. Therefore, it will not be included in the 2018 HMP Update.
5	Begin the process to adopt higher regulatory standards to manage flood risk (i.e.	Flood, Severe Storms		Municipality (via Municipal Engineer/NFIP	Ongoing Capability	Cost		1. Discontinue
						Level of Protection		2. -



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
	increased freeboard, cumulative substantial damage/improvements).			Floodplain Administrator) with support from NYSOEM, FEMA		Damages Avoided; Evidence of Success		3. This is an ongoing capability for the Village and is part of their day-to-day activities. Therefore, it will not be included in the 2018 HMP Update.
6	Conduct and facilitate community and public education and outreach for residents and businesses to include, but not be limited to, the following to promote and effect natural hazard risk reduction: Provide and maintain links to the HMP website, and regularly post notices on the County/municipal homepage(s) referencing the HMP webpages. Prepare and distribute informational letters to flood vulnerable property owners and neighborhood associations, explaining the availability of mitigation grant funding to mitigate their properties, and instructing them on how they can learn more and implement mitigation. Use email notification systems and newsletters to better educate the public on flood insurance, the availability of mitigation grant funding, and personal natural hazard risk reduction measures. Work with neighborhood associations, civic and business groups to	All Hazards		Municipality with support from Planning Partners, NYSOEM, FEMA	Ongoing Capability	Cost Level of Protection	- -	1. Discontinue 2. - 3. This is an ongoing capability for the Village and is part of their day-to-day activities. Therefore, it will not be included in the 2018 HMP Update.
						Damages Avoided; Evidence of Success	-	



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
	disseminate information on flood insurance and the availability of mitigation grant funding.							
7	Have designated NFIP Floodplain Administrator (FPA) become a Certified Floodplain Manager through the ASFP, and pursue relevant continuing education training such as FEMA Benefit-Cost Analysis.	Flood, Severe Storms		NFIP Floodplain Administrator	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. This is an ongoing capability for the Village and is part of their day-to-day activities. Therefore, it will not be included in the 2018 HMP Update.
8	Archive elevation certificates	Flood, Severe Storm		NFIP Floodplain Administrator	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. This is an ongoing capability for the Village and is part of their day-to-day activities. Therefore, it will not be included in the 2018 HMP Update.
9	Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Section 7.0	All Hazards		Municipality (via mitigation planning point of contacts) with support from Planning Partners (through their Points of Contact), NYSOEM	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. This is an ongoing capability for the Village and is part of their day-to-day activities. Therefore, it will not be included in the 2018 HMP Update.
10	Complete the ongoing updates of the Comprehensive Emergency Management Plans	All Hazards		Municipality with support from NYSOEM	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. This is an ongoing capability for the Village and is part of their day-to-day activities. Therefore, it will not be included in the 2018 HMP Update.
11	Create/enhance/ maintain mutual aid agreements with	All Hazards		Municipality with support from	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
	neighboring communities for continuity of operations.			Surrounding municipalities and County		Damages Avoided; Evidence of Success	-	3. This is an ongoing capability for the Village and is part of their day-to-day activities. Therefore, it will not be included in the 2018 HMP Update.
12	Identify and develop agreements with entities that can provide support with FEMA/SOEM paperwork after disasters; qualified damage assessment personnel – Improve post-disaster capabilities – damage assessment; FEMA/SOEM paperwork compilation, submissions, record-keeping	All Hazards		Municipality with support from County, NYSOEM, FEMA	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. This is an ongoing capability for the Village and is part of their day-to-day activities. Therefore, it will not be included in the 2018 HMP Update.
13	Work with regional agencies (i.e. County and SOEM) to help develop damage assessment capabilities at the local level through such things as training programs, certification of qualified individuals (e.g. code officials, floodplain managers, engineers).	All Hazards		Municipality with support from County, NYSOEM	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. This is an ongoing capability for the Village and is part of their day-to-day activities. Therefore, it will not be included in the 2018 HMP Update.
14	Participate in local, county and/or state level projects and programs to develop improved structure and facility inventories and hazard datasets to support enhanced risk assessment efforts. Such programs may include developing a detailed inventory of critical facilities based upon FEMA's Comprehensive Data Management System (CDMS) which could be used for various planning	All Hazards		HMP Coordinator	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. This is an ongoing capability for the Village and is part of their day-to-day activities. Therefore, it will not be included in the 2018 HMP Update.



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
	<p>and emergency management purposes including:</p> <p>Support the performance of enhanced risk and vulnerability assessments for hazards of concern.</p> <p>Support state, county and local planning efforts including mitigation (including updates to the State HMP), comprehensive emergency management, debris management, and land use.</p> <p>Improved structural and facility inventories could incorporate flood, wind and seismic-specific parameters (e.g. first floor elevations, roof types, structure types based on FEMA-154 “Rapid Visual Screening of Buildings for Potential Seismic Hazards” methodologies). It is recognized that these programs will need to be initiated and supported at the County and/or State level, and will require training, tools and funding provided at the county, state and/or federal level.</p>							



### Completed Mitigation Initiatives Not Identified in the Previous Mitigation Strategy

The Village of Candor has performed ongoing maintenance projects to reduce the impact of flooding but has not identified specific mitigation projects/activities that have been completed but were not identified in the previous mitigation strategy in the 2013 Plan.

### Proposed Hazard Mitigation Initiatives for the Plan Update

Tioga County held a mitigation action workshop in July 2018; however, the Village was unable to attend. The Village was provided with information presented at the workshop, along with the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 ‘Selecting Appropriate Mitigation Measures for Floodprone Structures’ (March 2007) and FEMA ‘Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards’ (January 2013).

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

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

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

Table 9.5-12. Proposed Hazard Mitigation Initiatives

Project Number	Project Name	Description of the Problem	Description of the Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues?	Estimated Timeline	Lead and Support Agencies	Estimated Cost	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category
Village of Candor-1	Upper Candor Dam Rehabilitation Project Catatunk Creek	See Action Worksheet	See Action Worksheet	Flood	1-1, 5-1, 5-3, 6-3	No	No	4 Months	Village of Candor working with Town of Candor	\$1.3 million	See Action Worksheet	FEMA PA and NYS match	High	SIP
Village of Candor-2 (previous action)	Catatunk Creek Flood Protection	Areas along Catatunk Creek are at risk to flooding. Flooding poses a risk to the life and safety of residents and emergency personnel during events.	Conduct an engineering study to determine the best solution to reduce or eliminate flooding along Catatunk Creek. Once solution is identified, complete project.	Flood	1, 3	No	No	Within 5 years	Village of Candor Engineering and Village Board working with Town of Candor	\$1 million and \$5 million	Reduce or eliminate flood damage, protect life and property	FEMA FMA or HMGP	Medium	SIP

## Notes:

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

Acronyms and Abbreviations:

CAV	Community Assistance Visit
CRS	Community Rating System
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
FPA	Floodplain Administrator
HMA	Hazard Mitigation Assistance
N/A	Not applicable
NFIP	National Flood Insurance Program
OEM	Office of Emergency Management

Potential FEMA HMA Funding Sources:

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

Timeline:

The time required to complete the project

Cost:

Estimated costs associated with implementation

Benefits:

The benefits that implementation of this project will provide.

Mitigation Category:

- Local Plans and Regulations (LPR) – These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.



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

**Critical Facility:**


- Yes  - Critical Facility located in 1% floodplain



Table 9.5-13. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community	Total	High / Medium / Low
Village of Candor-1	Upper Candor Dam Rehabilitation Project Catatonk Creek	1	1	1	1	1	1	0	1	1	0	1	1	0	0	10	High
Village of Candor-2 (previous action)	Catatonk Creek Flood Protection	1	1	1	1	0	0	0	1	1	1	0	0	1	0	8	Medium

Note: Refer to Section 6, which conveys guidance on prioritizing mitigation actions.



### **9.5.7 Future Needs To Better Understand Risk/Vulnerability**

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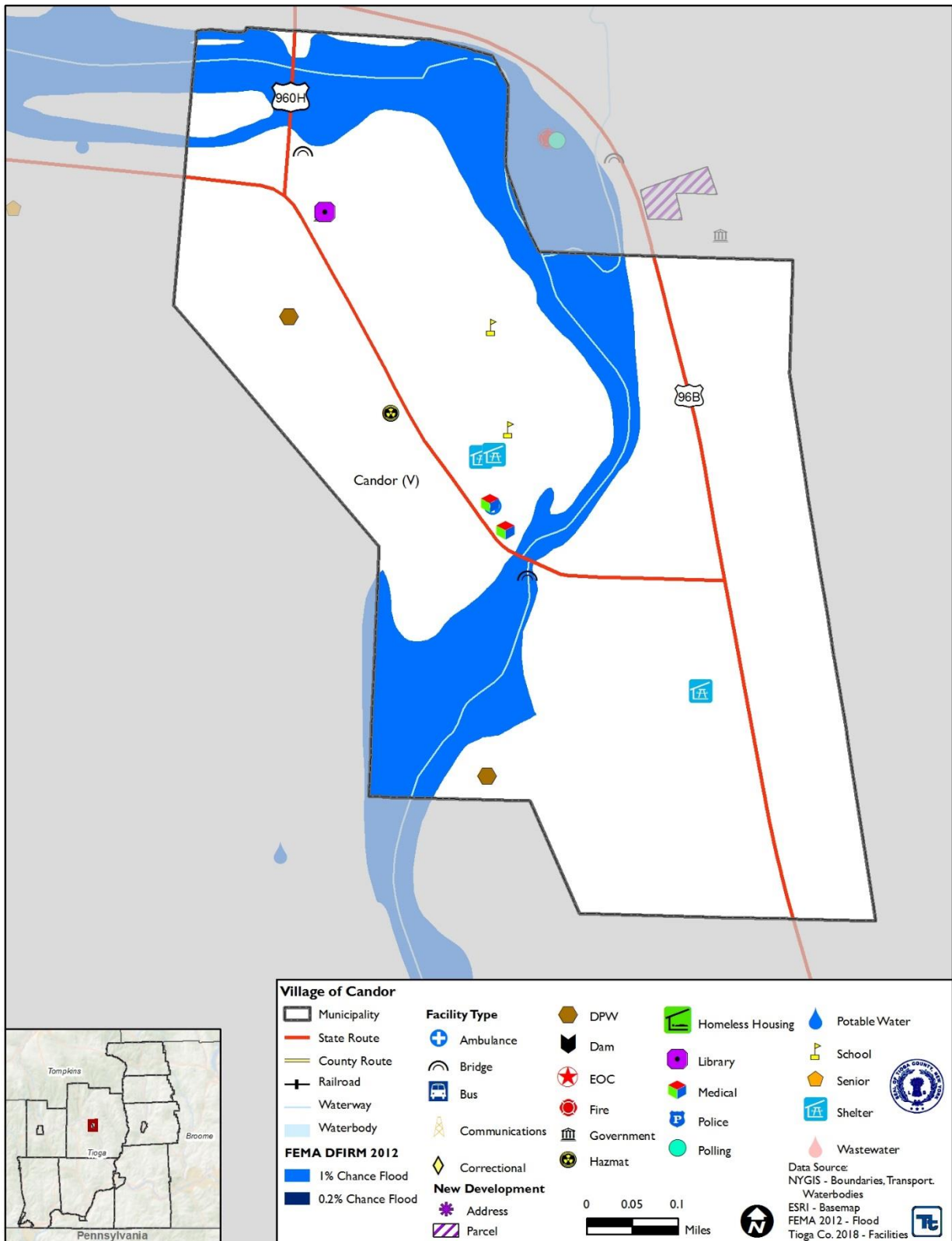
None at this time.

### **9.5.8 Hazard Area Extent and Location**

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

Figure 9.5-1. Village of Candor Hazard Area Extent and Location Map 1





Village of Candor Action Worksheet			
<b>Project Name:</b>	Upper Candor Dam Rehabilitation Project Catatonk Creek		
<b>Project Number:</b>	V. Candor-1		
Risk / Vulnerability			
<b>Hazard(s) of Concern:</b>	Dam failure has the potential to create downstream flooding and affect critical use facilities.		
<b>Description of the Problem:</b>	Significant water seepage under the dam. DEC has issued a violation notice requiring repairs to the dam to be in compliance.		
Action or Project Intended for Implementation			
<b>Description of the Solution:</b>	Cut and remove concrete from a portion of the top of the dam. Install 15' steel sheet piles and replace concrete. Install 9' sheet piles below the dam, extend apron with rip rap & place grout between the joints. Remove debris below the dam & place rip rap on banks to prevent erosion.		
<b>Is this project related to a Critical Facility?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
<b>Is this project related to a Critical Facility located within the 100-year floodplain?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
<b>Level of Protection:</b>	100-year flood	<b>Estimated Benefits (losses avoided):</b>	Repairs will prevent potential failure of the dam which could cause flooding and damage to critical use facilities (Fire station, school & health care facility)
<b>Useful Life:</b>	30 -60 years		
<b>Estimated Cost:</b>	\$1,300,000.00		
Plan for Implementation			
<b>Prioritization:</b>	High	<b>Desired Timeframe for Implementation:</b>	Project completion December 2018
<b>Estimated Time Required for Project Implementation:</b>	4 months	<b>Potential Funding Sources:</b>	75% FEMA Public Assistance 25% New York State
<b>Responsible Organization:</b>	Town of Candor in conjunction with the Village of Candor as the dam is located in the village	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	Hazard Mitigation
Three Alternatives Considered (including No Action)			
<b>Alternatives:</b>	<b>Action</b>	<b>Estimated Cost</b>	<b>Evaluation</b>
	No Action	\$0	Current problem continues
	Remove the dam	Unknown without study	If dam was removed it would lower the aquifer causing numerous nearby wells to stop producing water. The dam creates a pond which offers many recreational opportunities to residents. There is historical significance to the dam.
	Elevate all structures downstream of the dam	\$5 million or greater	Not feasible – very costly and not all structures can be elevated due to the type of structure or what services they provide.
Progress Report (for plan maintenance)			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			



Village of Candor Action Worksheet		
<b>Project Name:</b>	Upper Candor Dam Rehabilitation Project Catatonk Creek	
<b>Project Number:</b>	V. Candor-1	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
<b>Life Safety</b>	1	
<b>Property Protection</b>	1	Dam rehabilitation will reduce impact on fire station, school, and medical facility
<b>Cost-Effectiveness</b>	1	Dam project will reduce repetitive maintenance on streambank and critical facilities downstream.
<b>Technical</b>	1	Technical requirements of this project are feasible to implement.
<b>Political</b>	1	Dam has been issued DEC Violation and needs to be in compliance.
<b>Legal</b>	1	Project area located within Village of Candor
<b>Fiscal</b>	0	
<b>Environmental</b>	1	Project will reduce impacts of flooding and streambank erosion
<b>Social</b>	1	Proposed mitigation will reduce impact on emergency service and shelters
<b>Administrative</b>	0	
<b>Multi-Hazard</b>	1	Flooding and streambank erosion
<b>Timeline</b>	1	Project can be completed within 5 years.
<b>Agency Champion</b>	0	
<b>Other Community Objectives</b>	0	
<b>Total</b>	10	
<b>Priority (High/Med/Low)</b>	High	



Village of Candor Action Worksheet			
<b>Project Name:</b>	Catatonk Creek Flood Protection		
<b>Project Number:</b>	Village of Candor-2		
Risk / Vulnerability			
<b>Hazard(s) of Concern:</b>	Flood		
<b>Description of the Problem:</b>	Areas along Catatonk Creek are at risk to flooding. Flooding poses a risk to the life and safety of residents and emergency personnel during events.		
Action or Project Intended for Implementation			
<b>Description of the Solution:</b>	Conduct an engineering study to determine the best solution to reduce or eliminate flooding along Catatonk Creek. Once solution is identified, complete project.		
<b>Is this project related to a Critical Facility?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
<b>Is this project related to a Critical Facility located within the 100-year floodplain?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
<b>Level of Protection:</b>	100-year	<b>Estimated Benefits (losses avoided):</b>	Reduce or eliminate flood damage, protect life and property
<b>Useful Life:</b>	25-year		
<b>Estimated Cost:</b>	Between \$1 and \$5 million		
Plan for Implementation			
<b>Prioritization:</b>	Medium	<b>Desired Timeframe for Implementation:</b>	1 year
<b>Estimated Time Required for Project Implementation:</b>	Within 5 years	<b>Potential Funding Sources:</b>	FEMA FMA or HMGP
<b>Responsible Organization:</b>	Village of Candor Engineering and Village Board working with Town of Candor	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	Hazard Mitigation
Three Alternatives Considered (including No Action)			
<b>Alternatives:</b>	<b>Action</b>	<b>Estimated Cost</b>	<b>Evaluation</b>
	No Action	\$0	Current problem continues
	Elevate structures above the base flood elevation	\$4 million or greater	Not feasible – costly; some structures may not be able to elevate; while a long-term solution, roadways would still flood, and emergency personnel cannot access flooded areas
	Acquire structures in the floodprone areas	\$4 million or greater	Not feasible – costly and the Village will lose a large tax base as the land would need to be open space
Progress Report (for plan maintenance)			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			



Village of Candor Action Worksheet		
<b>Project Name:</b>	Catatonk Creek Flood Protection	
<b>Project Number:</b>	Village of Candor-2	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
<b>Life Safety</b>	1	Protect residents from flood damage
<b>Property Protection</b>	1	Protect structures from flood damage
<b>Cost-Effectiveness</b>	1	
<b>Technical</b>	1	
<b>Political</b>	0	Village does not have jurisdiction over some properties; some of the land is located in the Town of Candor
<b>Legal</b>	0	Village does not have jurisdiction over some properties; some of the land is located in the Town of Candor
<b>Fiscal</b>	0	Need grant funding
<b>Environmental</b>	1	
<b>Social</b>	1	
<b>Administrative</b>	1	
<b>Multi-Hazard</b>	0	Flood
<b>Timeline</b>	0	
<b>Agency Champion</b>	1	
<b>Other Community Objectives</b>	0	
<b>Total</b>	8	
<b>Priority (High/Med/Low)</b>	Medium	



Tioga County Jurisdictional Annex Review Sign-Off Sheet  
Signatures indicate review of annex content by the municipal official



VILLAGE OF CANDOR  
MUNICIPALITY NAME

**Mayor/Administrator/Supervisor**

Eric Halstead

Name

  
Signature

14 Nov 18  
Date

**Fiscal/CFO**

Lynne D. Roberts

Name

  
Signature

11/14/2018  
Date

**Building Code Official**

Michael Katchmir

Name / Title

  
Signature

14 Nov 18  
Date

**Floodplain Administrator**

Eric Halstead

Name / Title

  
Signature

14 Nov 18  
Date

**Emergency Manager**

Eric Halstead

Name / Title

  
Signature

14 Nov 18  
Date

**Land Use Planner**

Eric Halstead

Name / Title

  
Signature

14 Nov 18  
Date

**Public Works Director**

Eric Lang

Name / Title


  
Signature

10/20/18  
Date

**Highway Superintendent**

Eric Lang

Name / Title

  
Signature

11/20/18  
Date

**Police Department**

Brian Henry

Name / Title

  
Signature

01-02-19  
Date

**Fire Department**

Candor Fire Department

Name / Title

Signature

Date



## 9.6 TOWN OF NEWARK VALLEY

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



2010 Population: 2949  
Population in 100 year Floodplain (SFHA): 331

Land Area: 31,725 acres  
Land Area in Floodplain: 4.2%  
NFIP policies: 20  
NFIP Policies in SFHA: 12  
NFIP Claims: 13  
Total NFIP Losses: \$183,484



Number of Buildings: 1256  
Total Replacement Building Value: \$307.2 million  
Number of Buildings in the SFHA: 128  
Total Replacement Building Value Exposed in the SFHA: \$25.5 million

Mitigation Focus  
Multi Hazard



### 9.6.1 Hazard Mitigation Plan Point of Contact

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

Primary Point of Contact	Alternate Point of Contact
Stuart Yetter, Supervisor Phone: 607-642-8746 Email: nvsupervisor@stny.rr.com	Charles Meade, Highway Superintendent Phone: 607-642-9927 Email: nvhgwydept@stny.rr.com



## 9.6.2 Municipal Profile

The Town of Newark Valley is in the Tioga County, New York. The town is in the northeastern part of the county and is northwest of Binghamton, NY. The east town line is the border of Broome County with the Town of Berkshire to the north, Owego to the south, and Candor to the east. According to the United States Census Bureau, the town has a total area of 50.4 square miles (130.6 km<sup>2</sup>), of which, 50.3 square miles (130.4 km<sup>2</sup>) of it is land and 0.1 square miles (0.2 km<sup>2</sup>) of it (0.16%) is water. New York State Route 38 and New York State Route 38B intersect south of Newark Valley village.

The town is governed by a supervisor and four council members. According to the 2010 Census, the community's population was 2,949.

## Growth/Development Trends

The Town of Newark Valley did not note any recent residential/commercial development since 2012 or any major residential or commercial development, or major infrastructure development planned for the next five years in the municipality.

## 9.6.3 Natural Hazard Event History Specific to the Municipality

Tioga County has a history of natural and non-natural hazard events as detailed in Volume I, Section 5.0 of this plan. A summary of historical events is provided in each of the hazard profiles and includes a chronology of events that have affected the County and its municipalities. For the purpose of this plan update, events that have occurred in the County from 2012 to December 31, 2017 were summarized to indicate the range and impact of hazard events in the community. Information regarding specific damages is included, if available, based on reference material or local sources. This information is presented in the table below. For details of these and additional events, refer to Volume I, Section 5.0 of this plan.

**Table 9.6-1. Hazard Event History**

Dates of Event	Event Type (Disaster Declaration if applicable)	Tioga County Designated?	Summary of Damages/Losses
6/14/15	N/A	N/A	In some areas, homes, schools and other businesses were flooded.
3/14/17	DR 4322	Yes	<p>A Nor'easter moved up the eastern US coast on March 13th to late on the 14th. Heavy snow spread across parts of central New York and Pennsylvania late on March 13th. By late evening on the 14th snowfall amounts range from 8 to 33 inches of snow. After the strong area of low pressure moved northeast, lake effect snow bands formed producing more snow across the area on March 15, 2017.</p> <p>In the Town of Newark Valley, emergency services assisted NVFD &amp; Sheriff's Department in rescue of stranded motorists on NV/Maine Road and Settle Road and pulled all trucks off all roadways. The shoulders and banks of roads were damaged where the loader removed snow banks to widen the roads. Trucks were unable to do it due to high drift areas.</p> <p>Under FEMA &amp; SEMO report totaled \$37,490.61 which no funds have yet been paid. The Town received Blue Book which FEMA &amp; SEMO signed off the P-4 sheet signed Dec. 5, 2017 and sent back to SEMO at NYS Division of Homeland Security and Emergency Services, Albany. NY 12242</p>

Dates of Event	Event Type (Disaster Declaration if applicable)	Tioga County Designated?	Summary of Damages/Losses
7/23/17	N/A	Yes	<p>Rapid rises of area streams and creeks resulted in severe flash flooding for the Nichols, NY (\$284K in damages) and Vestal, NY areas.</p> <p>The Town of Newark Valley provided equipment to the Town of Owego (backhoe) and the Town of Newark Valley (three tandem trucks). Costs for gravel, equipment, and manpower for this assistance was under \$15,000.</p>

Notes:

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

## 9.6.4 Hazard Vulnerabilities and Ranking

The hazard profiles in Section 5.0 of this plan have detailed information regarding each plan participant's vulnerability to the identified hazards. This section provides a summary of exposure and impacts from significant hazards of concern as identified by the Town of Newark Valley. For additional vulnerability information relevant to this jurisdiction, refer to Section 5.0.

### Hazard Risk Ranking

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

As discussed in Section 5.3 (Hazard Ranking), each participating town or village may have differing degrees of risk exposure and vulnerability compared to Tioga County as a whole. Therefore, each municipality ranked the degree of risk to each hazard as it pertains to their community. The table below summarizes the hazard risk/vulnerability rankings of potential natural hazards for the Town of Newark Valley. The Town of Newark Valley has reviewed the County hazard risk/vulnerability risk ranking table as well as its individual results to reflect the relative risk of the hazards of concern to the community.

**Table 9.6-2. Hazard Risk/Vulnerability Risk Ranking**

Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard <sup>a, b, c</sup>		Probability of Occurrence	Hazard Ranking
Drought	Damage estimate not available		Frequent	Medium
Flood	RCV Exposed to 1% Annual Chance Flood Event	\$9,718,000	Frequent	Medium
Severe Storm	100-year MRP	\$0	Frequent	High
	500-year MRP	\$27,188		
Severe Winter Weather	1% GBS	\$1,923,520	Frequent	High
	5% GBS	\$9,617,600		

Notes:



- \* Municipality adjusted the hazard ranking
- a. Building damage ratio estimates based on FEMA 386-2 (August 2001)
- b. Loss estimates for the severe storm and severe winter storm hazards are structural values only and do not include the value of contents.
- c. Loss estimates for the flood hazard represents both structure and contents.

### National Flood Insurance Program (NFIP) Summary

The following table summarizes the NFIP statistics for the Town of Newark Valley.

**Table 9.6-3. NFIP Summary**

Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 100- year Boundary (3)
Newark Valley (T)	20	13	\$183,484.00	1	0	12

Source: FEMA 2018

1. Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA and are current as of February 28, 2018 and are summarized by Community Name. Please note the total number of repetitive loss properties excludes the severe repetitive loss properties. The number of claims represents claims closed by 2/28/2018. Total building and content losses from the claims file provided by FEMA Region 2.
2. Total building and content losses from the claims file provided by FEMA Region 2.

### Critical Facilities Flood Risk

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

**Table 9.6-4. Potential Flood Losses to Critical Facilities**

Name	Type	Exposure		Potential Loss from 1% Flood Event		Addressed by Proposed Action
		1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	
None identified						

Source: Tioga County GIS, FEMA 2012, and Hazus 4.2

### Identified Issues

The municipality has identified the following vulnerabilities within their community:

- None identified at the time of the plan update

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

- Areas near streams and the river

### 9.6.5 Capability Assessment

This section identifies the following capabilities of the local jurisdiction:

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

#### Planning and Regulatory Capability

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

**Table 9.6-5. Planning and Regulatory Tools**

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
<b>Planning Capability</b>				
Master Plan	Yes	Local	Planning	Master Plan
Capital Improvements Plan	No	-	-	-
Floodplain Management / Basin Plan	No	-	-	-
Stormwater Management Plan	Yes, 2015	County	County Planning/Town of Owego	Tioga County / Town of Owego 2015 – 2020 Stormwater Management Plan
Open Space Plan	No	-	-	-
Stream Corridor Management Plan	No	-	-	-
Watershed Management or Protection Plan	No	-	-	-
Economic Development Plan	Yes	County	Economic Development and Planning Department	Tioga County 2020 Strategic Plan
Comprehensive Emergency Management Plan	Yes	Local	Planning	Comprehensive Emergency Management Plan
Emergency Operation Plan	No	-	-	-
Post-Disaster Recovery Plan	No	-	-	-
Transportation Plan	No	-	-	-
Strategic Recovery Planning Report	No	-	-	-
Other Plans:	-	-	-	-
<b>Regulatory Capability</b>				
Building Code	Yes	State & Local	Code Enforcement	Building Code of NY State
Zoning Ordinance	No	-	-	-
Subdivision Ordinance	No	-	-	-



Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
NFIP Flood Damage Prevention Ordinance	Yes	Federal, State, Local	Code Enforcement	Chapter 106
NFIP: Cumulative Substantial Damages	No	-	-	-
NFIP: Freeboard	Yes	State, Local	Code Enforcement	State mandated BFE+2, residential and non-residential construction
Growth Management Ordinances	No	-	-	-
Site Plan Review Requirements	Yes	Local	Code Enforcement	Chapter 142
Stormwater Management Ordinance	No	-	-	-
Municipal Separate Storm Sewer System (MS4)	No	-	-	-
Natural Hazard Ordinance	No	-	-	-
Post-Disaster Recovery Ordinance	No	-	-	-
Real Estate Disclosure Requirement	Yes	State	-	NYS mandate, Property Condition Disclosure Act, NY Code - Article 14 §460-467
Other (Special Purpose Ordinances [i.e., sensitive areas, steep slope])	No	-	-	-

### Administrative and Technical Capability

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

**Table 9.6-6. Administrative and Technical Capabilities**

Resources	Is this in place? (Yes or No)	Department/ Agency/Position
<b>Administrative Capability</b>		
Planning Board	Yes	Planning Board
Mitigation Planning Committee	No	-
Environmental Board/Commission	No	-
Open Space Board/Committee	No	-
Economic Development Commission/Committee	No	-
Maintenance Programs to Reduce Risk	No	-
Mutual Aid Agreements	Yes	Town Board or Fire Department
<b>Technical/Staffing Capability</b>		
Planner(s) or engineer(s) with knowledge of land development and land management practices	No	-
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	No	-
Planners or engineers with an understanding of natural hazards	No	-

Resources	Is this in place? (Yes or No)	Department/ Agency/Position
NFIP Floodplain Administrator (FPA)	Yes	Code Enforcement
Surveyor(s)	No	-
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	No	-
Scientist familiar with natural hazards	No	-
Emergency Manager	No	-
Grant writer(s)	No	-
Staff with expertise or training in benefit/cost analysis	No	-
Professionals trained in conducting damage assessments	No	-

### Fiscal Capability

The table below summarizes financial resources available to the Town of Newark Valley

**Table 9.6-7. Fiscal Capabilities**

Financial Resources	Accessible or Eligible to Use (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	No
Capital improvements project funding	No
Authority to levy taxes for specific purposes	Yes
User fees for water, sewer, gas or electric service	No
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	No
Open Space Acquisition funding programs	No
Other	-

### Community Classifications

The table below summarizes classifications for community program available to the Town of Newark Valley.

**Table 9.6-8. Community Classifications**

Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	No	-	-

Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
NYSDEC Climate Smart Community	No	-	-
Storm Ready Certification	Yes	County	-
Firewise Communities classification	No	-	-
Natural disaster/safety programs in/for schools	No	-	-
Organizations with mitigation focus (advocacy group, non-government)	No	-	-
Public education program/outreach (through website, social media)	No	-	-
Public-private partnership initiatives addressing disaster-related issues	No	-	-

Note:

N/A Not applicable  
 NP Not participating  
 - Unavailable

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

Criteria for classification credits are outlined in the following documents:

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

### Self-Assessment of Capability

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

**Table 9.6-9. Self-Assessment Capability for the Municipality**

Area	Degree of Hazard Mitigation Capability		
	Limited (If limited, what are your obstacles?)	Moderate	High
Planning and regulatory capability	X - Not enough staff		



Area	Degree of Hazard Mitigation Capability		
	Limited (If limited, what are your obstacles?)	Moderate	High
Administrative and technical capability	X - Not enough staff		
Fiscal capability		X	
Community political capability		X	
Community resiliency capability		X	
Capability to integrate mitigation into municipal processes and activities		X	

## National Flood Insurance Program

### NFIP Floodplain Administrator (FPA)

Thomas Larson, Code Enforcement Officer

### Flood Vulnerability Summary

The municipality maintains lists/inventories of properties that have been flood damaged. This inventory identifies property owners who are interested mitigation (e.g. elevation, acquisition). The FPA noted 1 residential structure that is damaged during flooding events. The FPA does not make substantial damage estimates and noted that no residents are interested in mitigation (elevation or acquisition) or are in the process of mitigation.

### Resources

The FPA is the sole person responsible for floodplain administration. The FPA stated that no NFIP administration services or functions (e.g. permit review, inspections, damage assessments, record-keeping, GIS, education and outreach) have been required to be done. The FPA stated that the Town does not provide any education or outreach to the community regarding flood hazards/risk or flood risk reduction through NFIP insurance, mitigation, etc. The FPA does not feel there are any barriers to running an effective floodplain management program and noted that the town is small with little flooding risk aside from one stream and there is little need for floodplain management. The FPA feels adequately supported and trained to fulfill their responsibilities as the municipal floodplain administrator. The FPA would consider attending continuing education and/or certification training on floodplain management if it were offered in the County for all local floodplain administrators.

### Compliance History

The community in good-standing in the NFIP. According to NYSDEC, the most recent compliance audit was conducted on January 4, 2002.

### Regulatory

The FPA stated that floodplain management regulations/ordinances meet the FEMA and State minimum requirements. The Planning Board considers risk in order to support floodplain management. The Town has considered joining the Community Rating System in the past but would not be interested in attending a seminar on the program if it were offered locally.

## Integration of Hazard Mitigation into Existing and Future Planning Mechanisms

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day local government operations. As part of this planning effort, each community was surveyed to obtain a



better understanding of their community's progress in plan integration. A summary is provided below. In addition, the community identified specific integration activities that will be incorporated into municipal procedures.

### Planning

**Master Plan:** The Town of Newark Valley has a Master/Comprehensive Plan (land-use plan). While the plan does not include areas of natural hazard risk (e.g. flood-prone areas, steep slopes) the plan does refer to the Countywide Hazard Mitigation Plan.

**Comprehensive Emergency Management Plan:** The Town of Newark Valley has a Comprehensive Emergency Management Plan. The Plan refers to the Hazard Mitigation plan

### Regulatory and Enforcement (Ordinances)

**Zoning, Subdivision, and Site Plan Review:** The Town of Newark Valley's municipal zoning and subdivision regulations, and site plan review ordinance (Chapter 142 of the municipal Code) do not consider natural hazard risk (e.g. the presence of floodplains, steep slopes, etc.) or require developers to take additional actions to mitigate natural hazard risk (e.g. undergrounding utilities, stormwater detention, creating easements in areas/zones of hazard risk).

**Flood Damage Prevention Ordinance:** The Town of Newark Valley's NFIP Flood Damage Protection Ordinance (Chapter 106 of the municipal Code) meets the minimum Federal and State NFIP regulatory requirements.

### Operational and Administration

The Stormwater Management and NFIP Floodplain Management functions in the Town are carried out by the Code Enforcement Officer. The Town of Newark Valley does not have a municipal planner or contract planning firm. The Town's Planning Board takes into account risk.

The Town does not have any Boards or Committees that include functions with respect to managing natural hazard risk. The Town does have staff or contract with firms that have experience with developing Benefit-Cost Analysis, perform Substantial Damage Estimates, or have experience in preparing grant applications for mitigation projects. Town staff do not receive training or continuing professional education which supports natural hazard risk reduction. The FPA indicated that the Town does not have other hazard management programs in place such as vegetation management.

According to the FPA, no Town staff have job descriptions that specifically include identifying and/or implementing mitigation projects/actions or other efforts to reduce natural hazard risk. However, the Code and Highway Departments participate in associations, organizations, groups or other committees that support natural hazard risk reduction and build hazard management capabilities.

### Funding

The Town of Newark Valley's municipal/operating budget does not include line items for mitigation projects/activities. The Town does not have a Capital Improvements Budget. The Town has not pursued or been awarded grant funds for mitigation-related projects and does not have any other mechanisms to fiscally support hazard mitigation projects.



### Education and Outreach

The Town uses the Town Newsletter to inform citizens on natural hazards (e.g. safe use of generators, emergency preparedness, flood hazard information).

### Sheltering, Evacuation, and Temporary Housing

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

Tioga County, through a buildable land analysis, has identified areas suitable for placing temporary and permanent housing. Refer to Section 4.7.5 in Section 4 (County Profile) of Volume 1 of this plan for a description of resources identified by the county to support municipalities with the identification of evacuation, sheltering, and temporary and permanent housing. Each year, during the annual HMP progress meeting, the municipality will discuss their progress in identifying shelters, evacuation routes, and temporary and permanent housing for their community.

### Temporary and Permanent Housing

The Town of Newark Valley did not identify temporary housing for residents displaced by disaster or potential sites suitable for relocating houses of the floodplain and/or building new homes once properties in the floodplain are acquired.

### Evacuation and Sheltering Needs

The Town of Newark Valley does not have designated emergency shelters.

## 9.6.6 Mitigation Strategy and Prioritization

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

### Past Mitigation Initiative Status

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

Table 9.6-10. Status of Previous Mitigation Actions

Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
						Cost		
1	Brown Road – flooding issue - Evaluate if road is in floodplain; if so may be little to do about reoccurring flooding.	Flood		Town of Newark Valley with support from Town highway dept and Tioga County engineering dept.	No Progress	Level of Protection	-	1.
						Damages Avoided; Evidence of Success	-	2.
								3.
2	Chamberlain Road – Needs bigger crossover pipe near unnamed stream that discharges into Wilson Creek.	Flood		Town of Newark Valley with support from Town highway dept and Tioga County engineering dept.	In Progress	Level of Protection	-	1.
						Damages Avoided; Evidence of Success	-	2.
								3.
3	Brookside Mobile Home Park - Septic system needs improvement constantly flooded and concerns of leakage. - County Health Dept should evaluate septic system and work with the mobile home park to make sure system meets State Health codes. County Health Dept working illicit discharge and detection local law that will be County Wide, this will fall into their jurisdiction.	Flood		Town of Newark Valley with support from Tioga County SWCD	No Progress	Level of Protection	-	1.
						Damages Avoided; Evidence of Success	-	2.
								3.
4	Bailey Hollow Road-just past Lamb Road-Change a 6" Round to a 142" x 91" rise pipe arch 40' long. Every time a tropical storm comes through, it removes	Flood		Town of Newark Valley with support from Town highway dept and Tioga	No Progress	Level of Protection	-	1. Include in the 2018 HMP Update The pipe installed after the 2011 flood, funded by SEMO and FEMA, to solve a similar hazard at Lamb Rd. is 142" x 91". Because the effects of the flooding of the same creek at Bailey Hollow Rd are
								2.



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
	the road on both sides of pipe.			County engineering dept.				similar, we propose to replace the pipe under Bailey Hollow Rd with the same 142" x 91" pipe.
						Damages Avoided; Evidence of Success	-	3.
5	Barbertown Road-Replace a 66" x 43" steel pipe arch with a 142" x 91" x 30' raised pipe arch. Every time a tropical storm comes through it removes the road and large rip rap on the lower pipe.	Flood		Town of Newark Valley with support from Town highway dept and Tioga County engineering dept.	No Progress	Cost	-	1. Include in the 2018 HMP The pipe installed after the 2011 flood, funded by SEMO and FEMA, to solve a similar hazard at Lamb Rd. is 142" x 91". 2. Because the effects of the flooding of the same creek at Bailey Hollow Rd are similar, we propose to replace the pipe under Bailey Hollow Rd with the same 142" x 91" pipe.
						Level of Protection	-	2.
						Damages Avoided; Evidence of Success	-	3.
6	Dalton Hill Road-2 miles east of Wilson Creek-Change the 5-foot round pipe to a 131" x 85" x 60" long raised pipe arch. Every time a tropical storm comes through it removes 1.75 miles of road.	Flood		Town of Newark Valley with support from Town highway dept and Tioga County engineering dept.	No Progress	Cost	-	1.
						Level of Protection	-	2.
						Damages Avoided; Evidence of Success	-	3.
7	Dodson Hill Road-1/4 mile from State Route 38B - Change the 3' round pipe to a 4' round pipe. Every time a tropical storm comes through it takes ¼ mile of paved road out along with parts of the commentary.	Flood		Town of Newark Valley with support from Town highway dept and Tioga County engineering dept.	No Progress	Cost	-	1.
						Level of Protection	-	2.
						Damages Avoided; Evidence of Success	-	3.
8	Davis Hollow Road-2 ½ miles from Wilson Creek Road- Change a 5'10" round	Flood		Town of Newark Valley with support	No Progress	Cost	-	1.
						Level of Protection	-	2.



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
	steel to a 100' x 80" aluminized pipe arch 50-foot long. Every time a tropical storm comes it takes out ¾ mile road along with large rip rap on the next pipe.			from Town highway dept and Tioga County engineering dept.		Damages Avoided; Evidence of Success	-	3.
9	Retrofit structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority. Phase 1: Identify appropriate candidates for retrofitting based on cost-effectiveness versus relocation. Phase 2: Where retrofitting is determined to be a viable option, work with property owners toward implementation of that action based on available funding from FEMA and local match availability.	Flood, Severe Storm, Earthquake		Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	No Progress	Cost	-	1.
						Level of Protection	-	2.
						Damages Avoided; Evidence of Success	-	3.
10	Purchase, or relocate structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority. Phase 1: Identify appropriate candidates for relocation based on cost-effectiveness versus retrofitting. Phase 2: Where relocation is determined to be a viable option, work with property owners toward implementation of that action based on available	Flood, Severe Storm		Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	No Progress	Cost	-	1.
						Level of Protection	-	2.
						Damages Avoided; Evidence of Success	-	3.



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
	funding from FEMA and local match availability.							
11	Maintain compliance with and good-standing in the NFIP including adoption and enforcement of floodplain management requirements (e.g. regulating all new and substantially improved construction in Special Hazard Flood Areas), floodplain identification and mapping, and flood insurance outreach to the community. Further, continue to meet and/or exceed the minimum NFIP standards and criteria through the following NFIP-related continued compliance actions identified as Initiatives 9 – 18 (below).	Flood, Severe Storms	This is an ongoing capability for the Town – there is no original problem associated with this project	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, ISO FEMA	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. Ongoing capability
12	Begin the process to adopt higher regulatory standards to manage flood risk (i.e. increased freeboard, cumulative substantial damage/improvements).	Flood, Severe Storms	This is an ongoing capability for the Town – there is no original problem associated with this project	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. Ongoing capability
13	Conduct and facilitate community and public education and outreach for residents and businesses to include, but not be limited to, the following to promote and effect natural hazard risk reduction: Provide and maintain links to the HMP website, and	All Hazards	This is an ongoing capability for the Town – there is no original problem associated with this project	Municipality with support from Planning Partners, NYSOEM, FEMA	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. Ongoing capability



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
	regularly post notices on the County/municipal homepage(s) referencing the HMP webpages. Prepare and distribute informational letters to flood vulnerable property owners and neighborhood associations, explaining the availability of mitigation grant funding to mitigate their properties, and instructing them on how they can learn more and implement mitigation. Use email notification systems and newsletters to better educate the public on flood insurance, the availability of mitigation grant funding, and personal natural hazard risk reduction measures. Work with neighborhood associations, civic and business groups to disseminate information on flood insurance and the availability of mitigation grant funding.							
14	Have designated NFIP Floodplain Administrator (FPA) become a Certified Floodplain Manager through the ASFPM, and pursue relevant continuing education training such as FEMA Benefit-Cost Analysis.	Flood, Severe Storms	This is an ongoing capability for the Town – there is no original problem associated with this project	NFIP Floodplain Administrator	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. Ongoing capability
15	Archive elevation certificates	Flood, Severe Storms	This is an ongoing capability for	NFIP Floodplain Administrator	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -





Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
			the Town – there is no original problem associated with this project			Damages Avoided; Evidence of Success	-	3. Ongoing capability
16	Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Section 7.0	All Hazards	This is an ongoing capability for the Town – there is no original problem associated with this project	Municipality (via mitigation planning point of contacts) with support from Planning Partners (through their Points of Contact), NYSOEM	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. Ongoing capability
17	Complete the ongoing updates of the Comprehensive Emergency Management Plans	All Hazards	This is an ongoing capability for the Town – there is no original problem associated with this project	Municipality with support from NYSOEM	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. Ongoing capability
18	Create/enhance/ maintain mutual aid agreements with neighboring communities for continuity of operations.	All Hazards	This is an ongoing capability for the Town – there is no original problem associated with this project	Municipality with support from Surrounding municipalities and County	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. Ongoing capability
19	Identify and develop agreements with entities that can provide support with FEMA/SOEM paperwork after disasters; qualified damage assessment personnel –	All Hazards	This is an ongoing capability for the Town – there is no original problem	Municipality with support from County, NYSOEM, FEMA	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. Ongoing capability

Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
	Improve post-disaster capabilities – damage assessment; FEMA/SOEM paperwork compilation, submissions, record-keeping		associated with this project					
20	Work with regional agencies (i.e. County and SOEM) to help develop damage assessment capabilities at the local level through such things as training programs, certification of qualified individuals (e.g. code officials, floodplain managers, engineers).	All Hazards	This is an ongoing capability for the Town – there is no original problem associated with this project	Municipality with support from County, NYSOEM	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. Ongoing capability
21	Participate in local, county and/or state level projects and programs to develop improved structure and facility inventories and hazard datasets to support enhanced risk assessment efforts. Such programs may include developing a detailed inventory of critical facilities based upon FEMA's Comprehensive Data Management System (CDMS) which could be used for various planning and emergency management purposes including: Support the performance of enhanced risk and vulnerability assessments for hazards of concern. Support state, county and local planning efforts including mitigation (including updates to the State HMP), comprehensive	All Hazards		HMP Coordinator	No Progress	Cost	-	1.
						Level of Protection	-	2.
						Damages Avoided; Evidence of Success	-	3.



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
	emergency management, debris management, and land use. Improved structural and facility inventories could incorporate flood, wind and seismic-specific parameters (e.g. first floor elevations, roof types, structure types based on FEMA-154 "Rapid Visual Screening of Buildings for Potential Seismic Hazards" methodologies). It is recognized that these programs will need to be initiated and supported at the County and/or State level, and will require training, tools and funding provided at the county, state and/or federal level.							
22	Dalton Hill refurbished abutments and wingwalls	Flood, Severe Storm		DPW	No Progress	Cost	-	1. Include in 2018 HMP
						Level of Protection	-	2. Dalton Hill refurbished abutments and wingwalls
						Damages Avoided; Evidence of Success	-	3. -



### Completed Mitigation Initiatives Not Identified in the Previous Mitigation Strategy

The Town of Newark Valley has performed ongoing maintenance projects to reduce the impact of flooding. This includes making repairs to Ketchumville Road bridge for a total cost of \$27,266.12.

### Proposed Hazard Mitigation Initiatives for the Plan Update

The Town of Newark Valley participated in a mitigation action workshop on July 11, 2018 and was provided the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 ‘Selecting Appropriate Mitigation Measures for Floodprone Structures’ (March 2007) and FEMA ‘Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards’ (January 2013).

Table 9.6-11 summarizes the comprehensive-range of specific mitigation initiatives the Town of Newark Valley would like to pursue in the future to reduce the effects of hazards. Some of these initiatives may be previous actions carried forward for this plan update. These initiatives are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. Both the four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

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

Table 9.6-12 provides a summary of the prioritization of all proposed mitigation initiatives for the Plan update.



Table 9.6-11. Proposed Hazard Mitigation Initiatives

Project Number	Project Name	Description of the Problem	Description of the Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues?	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Potential Funding Sources	Estimated Timeline	Priority	Mitigation Category
Town of Newark Valley-1	Barber Town Road Culvert Upgrade	See Action Worksheet	See Action Worksheet	Flood	1-1, 5-1	No	No	Town of Newark Valley Highway Department	Prevent the future loss of Barber Town Rd and loss of access to 9 houses.	Medium (\$10k - \$100k)	FEMA (HMA), NYSDEC	1 - 2 years	High	SIP
Town of Newark Valley-2	Bailey Hollow Road Culvert Upgrade	See Action Worksheet	See Action Worksheet	Flood	1-1, 5-1	No	No	Town of Newark Valley Highway Department	\$100,000	Medium (\$10k - \$100k)	FEMA (HMA), NYSDEC	1 - 2 years	High	SIP
Town of Newark Valley-3	Dalton Hill Road	The culvert and surrounding areas of Dalton Hill Road are in need of repair. This is leading to runoff and erosion and impacting the integrity of the roadway, culvert and surrounding area.	Dalton Hill refurbished abutments and wingwalls	Flood, Severe Storm	1, 5	No	No	Town of Newark Valley Highway Department	Increase integrity of the road	\$8,000-\$10,000	Town Budget	2 years	Medium	SIP

Notes:

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

**Acronyms and Abbreviations:**

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

**Potential FEMA HMA Funding Sources:**

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

**Timeline:**

The time required to complete the project

**Cost:**

Estimated costs associated with implementation

**Benefits:**

The benefits that implementation of this project will provide.





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

Mitigation Category:

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

Critical Facility:

- Yes 💧 - Critical Facility located in 1% floodplain



**Table 9.6-12. Summary of Prioritization of Actions**

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community	Total	High / Medium / Low
Town of Newark Valley-1	Barber Town Road Culvert Upgrade	1	1	1	1	1	1	0	0	1	1	0	1	0	0	9	High
Town of Newark Valley-2	Bailey Hollow Road Culvert Upgrade	1	1	1	1	1	1	0	0	1	1	0	1	0	0	9	High
Town of Newark Valley-3	Dalton Hill Road	1	1	1	1	0	0	0	1	0	1	1	0	0	0	7	Medium

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



### **9.6.7 Future Needs to Better Understand Risk/Vulnerability**

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None at this time.

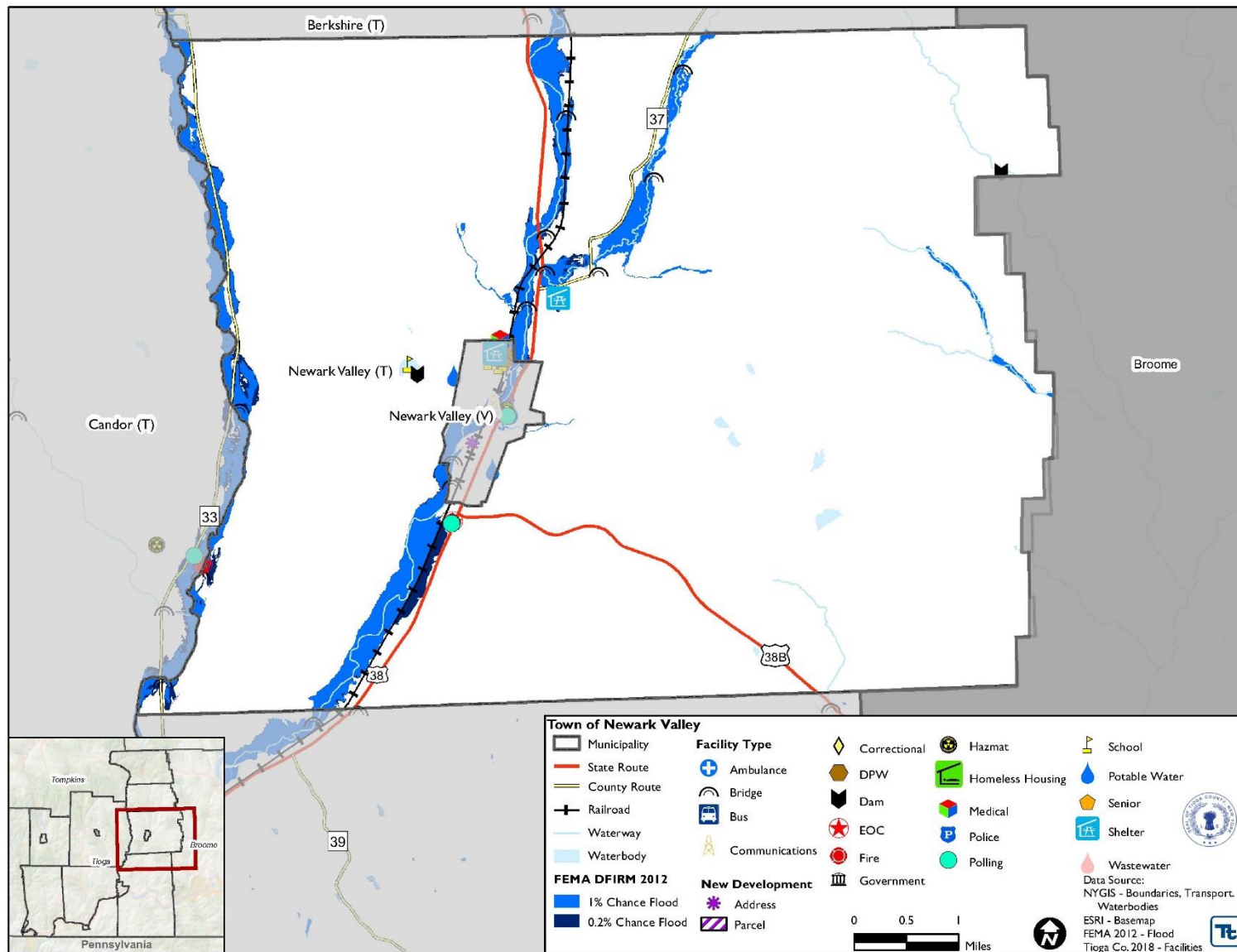
### **9.6.8 Hazard Area Extent and Location**

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



Figure 9.6-1. Town of Newark Valley Hazard Area Extent and Location





Town of Newark Valley Action Worksheet			
<b>Project Name:</b>	Barber Town Road Culvert Upgrade		
<b>Project Number:</b>	T. Newark Valley-1		
Risk / Vulnerability			
<b>Hazard(s) of Concern:</b>	Flooding		
<b>Description of the Problem:</b>	Barber Town Rd crosses a creek at approximately 42.218159, -76.204301. The flow of the creek is not overly constricted (i.e. the creek does not flood) in most normal rain events. But with heavy rain over a 2- to 4-day period, the creek rises, eventually covering the roadway. Additionally, a school's retention pond drains into this creek. During large, or prolonged rain events, this retention pond sends higher flows into the creek, causing it to backup, thus flooding Barber Town Rd. When the creek floods, it washes out the road and also cuts off access to approximately 9 homes. This also causes a loss of service for the time it takes the flood waters to recede and/or for the repairs to be made to the bridge and roadway when it is washed out. This area experienced such floods around 2000 as well as in 2006 and 2011 and is locally known as an area that floods frequently. Following a previous flood (2011?), a similar project was implemented with funding from FEMA at a point where Lamb Rd crosses a creek (42.236241, -76.093755), to resolve a similar flooding issue.		
Action or Project Intended for Implementation			
<b>Description of the Solution:</b>	The pipe installed after the 2011 flood, funded by SEMO and FEMA, to solve a similar hazard at Lamb Rd. is 142" x 91". Because the effects of the flooding of the same creek at Bailey Hollow Rd are similar, we propose to replace the pipe under Barber Town Rd with the same 142" x 91" pipe.		
<b>Is this project related to a Critical Facility?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
<b>Is this project related to a Critical Facility located within the 100-year floodplain?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
<b>Level of Protection:</b>	100	<b>Estimated Benefits (losses avoided):</b>	Prevent the future loss of Barber Town Rd and loss of access to 9 houses.
<b>Useful Life:</b>	30		
<b>Estimated Cost:</b>	Medium (\$10k - \$100k)		
Plan for Implementation			
<b>Prioritization:</b>	High (1st for the Town)	<b>Desired Timeframe for Implementation:</b>	1 - 2 years
<b>Estimated Time Required for Project Implementation:</b>	3 weeks	<b>Potential Funding Sources:</b>	FEMA FMA and HMGP
<b>Responsible Organization:</b>	Town of Newark Valley Highway Department	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	Hazard Mitigation
Three Alternatives Considered (including No Action)			
<b>Alternatives:</b>	Action	Estimated Cost	Evaluation
	No Action	\$0	continued re-building of road surface after storm events, continued cost to tax payers.
	Increase the size of the school's retention pond	\$17.50 - \$35.00 per cubic meter of wet detention storage area.	More expensive and more complex administratively (multiple/additional parties involved); could require a new layer of management to function properly
	Increase storage in Alexander Pond for peak rain events	\$17.50 - \$35.00 per cubic meter of wet detention storage area.	More expensive and more complex administratively (multiple/additional parties involved); could require a new layer of management to function properly
Progress Report (for plan maintenance)			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			



Town of Newark Valley Action Worksheet		
<b>Project Name:</b>	Barber Town Road Culvert Upgrade	
<b>Project Number:</b>	T. Newark Valley-1	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
<b>Life Safety</b>	1	Will reduce possibility of isolated populations existing with the 9 properties during flood events
<b>Property Protection</b>	1	Proposed mitigation will reduce impact of flood waters on the bridge and roadway.
<b>Cost-Effectiveness</b>	1	Proposed mitigation action will reduce repetitive repair costs to bridge and roadway
<b>Technical</b>	1	Technical requirements of this project are feasible to implement.
<b>Political</b>	1	
<b>Legal</b>	1	Project area located within Town of Newark Valley
<b>Fiscal</b>	0	
<b>Environmental</b>	0	
<b>Social</b>	1	Proposed mitigation will reduce possibility of isolated populations
<b>Administrative</b>	1	
<b>Multi-Hazard</b>	0	
<b>Timeline</b>	1	Project can be completed within 5 years
<b>Agency Champion</b>	0	
<b>Other Community Objectives</b>	0	
<b>Total</b>	9	
<b>Priority (High/Med/Low)</b>	High	



Town of Newark Valley Action Worksheet			
<b>Project Name:</b>	Bailey Hollow Road Culvert Upgrade		
<b>Project Number:</b>	T. Newark Valley-2		
Risk / Vulnerability			
<b>Hazard(s) of Concern:</b>	Flooding		
<b>Description of the Problem:</b>	<p>Bailey Hollow Rd crosses a creek at approximately 42.232515, -76.092708. The flow of the creek is not overly constricted (i.e. the creek does not flood) in most normal rain events. But with heavy rain over a 2- to 4-day period, the creek rises, eventually covering the bridge/roadway. This flooding of the creek washes out the road, which serves approximately 14 homes between this bridge and its next water crossing approximately 1.5 miles away, where the Bailey Hollow Rd crosses the Ketchumville Branch (approximately 42.225281, -76.067889). All of these homes can be completely cutoff if the Ketchumville Branch also floods where it crosses under Bailey Hollow Rd. This also causes a loss of service for the time it takes the flood waters to recede and/or for the repairs to be made to the bridge and roadway when it is washed out. The creek flooded this area of Bailey Hollow Rd in 2006 and 2011 and is known locally to flood frequently.</p> <p>Following a previous flood (2011?), FEMA-funded (?) work was performed on this creek upstream at Lamb Rd (at 42.236241, -76.093755, approximately .3 miles from Bailey Hollow Rd) to resolve a similar flooding issue at that point. While the work has reduced flooding in that area, it seems to have exacerbated the already existing flooding problems downstream at Bailey Hollow Rd.</p>		
Action or Project Intended for Implementation			
<b>Description of the Solution:</b>	The pipe installed after the 2011 flood, funded by SEMO and FEMA, to solve a similar hazard at Lamb Rd. is 142" x 91". Because the effects of the flooding of the same creek at Bailey Hollow Rd are similar, we propose to replace the pipe under Bailey Hollow Rd with the same 142" x 91" pipe.		
<b>Is this project related to a Critical Facility?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
<b>Is this project related to a Critical Facility located within the 100-year floodplain?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
<b>Level of Protection:</b>	100	<b>Estimated Benefits (losses avoided):</b>	\$100,000
<b>Useful Life:</b>	30		
<b>Estimated Cost:</b>	Medium (\$10k - \$100k)		
Plan for Implementation			
<b>Prioritization:</b>	High (2nd for the Town)	<b>Desired Timeframe for Implementation:</b>	1 - 2 years
<b>Estimated Time Required for Project Implementation:</b>	3 weeks	<b>Potential Funding Sources:</b>	FEMA (FMA and HMGP), NYSDEC
<b>Responsible Organization:</b>	Town of Newark Valley Highway Department	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	Hazard Mitigation, Tioga County SWCD
Three Alternatives Considered (including No Action)			
<b>Alternatives:</b>	<b>Action</b>	<b>Estimated Cost</b>	<b>Evaluation</b>
	No Action	\$0	continued re-building of road surface after storm events; continued cost to tax payers; risk to downstream residences remains.
	Upstream retention/detention pond(s)	\$17.50 - \$35.00 per cubic meter of wet detention storage area; land acquisition	More expensive and more complex administratively (multiple/additional parties involved); could require new/separate O&M to function properly
	Dredging of the creek	\$100k	ecological problems with dredging a small stream; upstream and downstream flow issues; not a permanent solution
Progress Report (for plan maintenance)			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			



Town of Newark Valley Action Worksheet		
<b>Project Name:</b>	Bailey Hollow Road Culvert Upgrade	
<b>Project Number:</b>	T. Newark Valley-2	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
<b>Life Safety</b>	1	Will reduce possibility of isolated populations existing with the 14 properties during flood events
<b>Property Protection</b>	1	Proposed mitigation will reduce impact of flood waters on the bridge and roadway.
<b>Cost-Effectiveness</b>	1	Proposed mitigation action will reduce repetitive repair costs to bridge and roadway
<b>Technical</b>	1	Technical requirements of this project are feasible to implement.
<b>Political</b>	1	
<b>Legal</b>	1	Project area located within Town of Newark Valley
<b>Fiscal</b>	0	
<b>Environmental</b>	0	
<b>Social</b>	1	Proposed mitigation will reduce possibility of isolated populations
<b>Administrative</b>	1	
<b>Multi-Hazard</b>	0	
<b>Timeline</b>	1	Project can be completed within 5 years
<b>Agency Champion</b>	0	
<b>Other Community Objectives</b>	0	
<b>Total</b>	9	
<b>Priority (High/Med/Low)</b>	High	



Signatures indicate review of annex content by the municipal official

MUNICIPALITY NAME

Mayor/Administrator/Supervisor

Name Sharon Yetter

Signature [Signature]

Date 11/16/18

Fiscal/CFO

Name

Signature

Date

Building Code Official

Name/Title THOMAS J. LARSON

Signature Thomas J. Larson

Date 11/16/18

Floodplain Administrator

Name/Title THOMAS J. LARSON

Signature Thomas J. Larson

Date 11/16/18

Emergency Manager

Name/Title

Signature

Date

Land Use Planner

Name/Title

Signature

Date

Public Works Director

Name/Title

Signature

Date

Highway Superintendent

Name/Title Charles E. Meade Hwy Supr

Signature Charles E. Meade

Date 11/14/18

Police Department

Name/Title

Signature

Date

Fire Department

Name/Title

Signature

Date

## 9.7 VILLAGE OF NEWARK VALLEY

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



**2010 Population: 997**  
**Population in 100 year Floodplain (SFHA): 95**

**Land Area: 633.8 acres**  
**Land Area in Floodplain: 17.8%**  
**NFIP policies: 15**  
**NFIP Policies in SHFA: 7**  
**NFIP Claims: 14**  
**Total NFIP Losses: \$448,164**



**Number of Buildings: 453**  
**Total Replacement Building Value: \$140.4 million**  
**Number of Buildings in the SFHA: 49**  
**Total Replacement Building Value Exposed in the SHFA: \$17.3 million**

**Mitigation Focus**  
**Flood , Severe Storm, Severe Winter Storm**



### 9.7.1 Hazard Mitigation Plan Point of Contact

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

Primary Point of Contact	Alternate Point of Contact
Bill Foster, Public Works Supervisor Phone: 607-642-8700 Cell: 607-642-8686/658-6191 Email: <a href="mailto:villagebarn@stny.rr.com">villagebarn@stny.rr.com</a> <a href="mailto:bfoster1@msn.com">bfoster1@msn.com</a>	Jim Tornatore, Mayor Phone: 607-642-8686 Cell: 607-642-3543 Email: <a href="mailto:jtornatore@stny.rr.com">jtornatore@stny.rr.com</a> <a href="mailto:vofnvmayor@stny.rr.com">vofnvmayor@stny.rr.com</a>

### 9.7.2 Municipal Profile

The Village of Newark Valley is in Tioga County, New York. The village is located in the western part of the Town of Newark Valley and is northwest of Binghamton, New York, and is the main population area. According to the U.S. Census Bureau, the village has a total area of 1.0 square miles (2.5 km<sup>2</sup>). The village is in the valley of the East Branch of Owego Creek, on Route 38 (Main Street), north of its junction with NY-38B and south of its junction with County Road 37.

The village is governed by a mayor and board of trustees. According to the 2010 Census, the community's population was 997.

### Growth/Development Trends

The following table summarizes recent residential/commercial development since 2012 to present and any known or anticipated major residential/commercial development and major infrastructure development that has been identified in the next five years within the municipality. Refer to the map in 9.7.8 of this annex which illustrates the hazard areas along with the location of potential new development.

**Table 9.7-1. Growth and Development**

Property or Development Name	Type (e.g. Res., Comm.)	# of Units / Structures	Location (address and/or Parcel ID)	Known Hazard Zone(s)	Description/Status of Development
<b>Recent Development from 2012 to present</b>					
Ladder Factory	Comm/limited	1	5 Clinton Street	No	425 x 125 feet structure
<b>Known or Anticipated Development in the Next Five (5) Years</b>					
None anticipated					

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

### 9.7.3 Natural Hazard Event History Specific to the Municipality

Tioga County has a history of natural and non-natural hazard events as detailed in Volume I, Section 5.0 of this plan. A summary of historical events is provided in each of the hazard profiles and includes a chronology of events that have affected the County and its municipalities. For the purpose of this plan update, events that have occurred in the County from 2012 to October 19, 2018 were summarized to indicate the range and impact of hazard events in the community. Information regarding specific damages is included, if available, based on reference material or local sources. This information is presented in the table below. For details of these and additional events, refer to Volume I, Section 5.0 of this plan.



**Table 9.7-2. Hazard Event History**

Dates of Event	Event Type (Disaster Declaration if applicable)	Tioga County Designated?	Summary of Damages/Losses
6/14/15	N/A	N/A	In some areas, homes, schools and other businesses were flooded. In the Village of Newark Valley, flooding damaged several private residences on Brook Street and a retaining wall at Slosson Creek. Public assistance was requested from the County. Many homes were flooded.
3/14/17	Severe Winter Storm and Snowstorm (DR-4322)	Yes	A Nor'easter moved up the eastern US coast on March 13th to late on the 14th. Heavy snow spread across parts of central New York and Pennsylvania late on March 13th. By late evening on the 14th snowfall amounts range from 8 to 33 inches of snow. After the strong area of low pressure moved northeast, lake effect snow bands formed producing more snow across the area on March 15, 2017. In the Village of Newark Valley, losses were recorded for snow removal, material, and overtime hours.
7/15/17	N/A	N/A	Rapid rises of area streams and creeks resulted in severe flash flooding. In the Village of Newark Valley, flooding resulted in the closure of Trout Ponds Park for two Pavilion rental events.
7/23/17	N/A	N/A	Rapid rises of area streams and creeks resulted in severe flash flooding for the Nichols, NY (\$284K in damages) and Vestal, NY areas.
8/18/18	N/A	N/A	Rapid rises of area streams and creeks resulted in severe flash flooding. In the Village of Newark Valley, flooding resulted in the closure of Trout Ponds Park for two Pavilion rental events and the flooding of residential property on Brook St, and The closing of State Route 38 North and South
9/18/18	Severe Storms and Flooding (DR-4397)	Yes	Rapid rises of area streams and creeks resulted in severe flash flooding. In the Village of Newark Valley, flooding resulted in the flooding of residential property on Brook St, and The closing of State Route 38 North and South

**Notes:**

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

## 9.7.4 Hazard Vulnerabilities and Ranking

The hazard profiles in Section 5.0 of this plan have detailed information regarding each plan participant's vulnerability to the identified hazards. This section provides a summary of exposure and impacts from significant hazards of concern as identified by the Village of Newark Valley. For additional vulnerability information relevant to this jurisdiction, refer to Section 5.0.

### Hazard Risk Ranking

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

As discussed in Section 5.3 (Hazard Ranking), each participating town or village may have differing degrees of risk exposure and vulnerability compared to Tioga County as a whole. Therefore, each municipality ranked the degree of risk to each hazard as it pertains to their community. The table below summarizes the hazard

risk/vulnerability rankings of potential natural hazards for the Village of Newark Valley. The Village of Newark Valley has reviewed the County hazard risk/vulnerability risk ranking table as well as its individual results to reflect the relative risk of the hazards of concern to the community.

The Village considers flood, severe winter storm and severe storm all to be high ranked hazards which pose the prospect of future impacts to the community. Due to recent flood events include the 2014 event, the Village ranked the flood hazard high as many areas outside the regulatory floodway are floodprone. The Village works closely with the Tioga County Dept of Emergency Preparedness to address citizen flood preparedness. Snow events also present a significant hazard due to the aftermath of the snow which due to snowmelt causes flooding. The Village has a mitigation plan and very proactive through shared services.

**Table 9.7-3. Hazard Risk/Vulnerability Risk Ranking**

Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard <sup>a, b, c</sup>		Probability of Occurrence	Hazard Ranking
Drought	Damage estimate not available,		Frequent	Medium
Flood	RCV Exposed to 1% Annual Chance Flood Event	\$25,506,000	Frequent	High*
Severe Storm	100-year MRP	\$0	Frequent	High
	500-year MRP	\$10,416		
Severe Winter Weather	1% GBS	\$869,120	Frequent	High
	5% GBS	\$4,345,600		

Notes:

\* Municipality adjusted the hazard ranking

a. Building damage ratio estimates based on FEMA 386-2 (August 2001)

b. Loss estimates for the severe storm and severe winter storm hazards are structural values only and do not include the value of contents.

c. Loss estimates for the flood hazard represents both structure and contents.

### National Flood Insurance Program (NFIP) Summary

The following table summarizes the NFIP statistics for the Village of Newark Valley.

**Table 9.7-4. NFIP Summary**

Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 100-year Boundary (3)
Newark Valley (V)	14	14	\$200,635.00	0	1	7

Source: FEMA 2018

1. Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA and are current as of February 28, 2018 and are summarized by Community Name. Please note the total number of repetitive loss properties excludes the severe repetitive loss properties. The number of claims represents claims closed by 2/28/2018. Total building and content losses from the claims file provided by FEMA Region 2.
2. Total building and content losses from the claims file provided by FEMA Region 2.

### Critical Facilities at Risk to Flooding

New York Department of Environmental Conservation (DEC) Statute 6 CRR-NY 502.4 sets forth floodplain management criteria for State projects located in flood hazard areas. The law states that no such projects related to critical facilities shall be undertaken in a Special Flood Hazard Area (SFHA) unless constructed according to specific mitigation specifications, including being raised 2' above the Base Flood Elevation (BFE). This statute is outlined at <http://tinyurl.com/6-CRR-NY-502-4> While all vulnerabilities should be assessed and documented,

the State places a high priority on exposure to flooding. Critical facilities located in an SFHA, or having ever sustained previous flooding, must be protected to the 500-year flood even, or worst damage scenario. For those that do not meet this criteria, the jurisdiction must identify an action to achieve this level of protection (NYSDHSES 2017).

The table below presents Hazards United States (HAZUS) – Multi-Hazards (MH) estimates of the damage and loss of use to critical facilities in the community as a result of a 1-percent annual chance flood event. It should be noted that the former ladder factory is a vacant lot with soil and groundwater contamination, which is contained. It is a NYS DEC brownfield site. While it located within the 0.2 percent annual chance flood area, it is not susceptible to damages and cannot be mitigated as it is a vacant lot. The Silk Street area had a petroleum spill; however, there are no structures involved and cannot be mitigated as it is a vacant lot.

**Table 9.7-5. Potential Flood Losses to Critical Facilities**

Name	Type	Exposure		Potential Loss from 1% Flood Event		Addressed by Proposed Action
		1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	
Former ladder factory – vacant lot with soil and groundwater contamination that has been contained	Hazmat		X	-	-	V. Newark Valley-8
Location of petroleum spill (Silk St. near the Creek)	Hazmat		X	-	-	V. Newark Valley-9
Citizens Telecom Co of NY Dba Frontier Comm of NY*	Telecom		X	-	-	V. Newark Valley-10
Well 4 trout pond well <sup>1</sup>	Well	X	X	-	-	V. Newark Valley-2 and V. Newark Valley-11

Source: Tioga County GIS, FEMA 2012, and Hazus 4.2

<sup>1</sup> This site is currently in the process of being mitigated as it is part of the Owego Creek cleanout project

\* Facility is not owned by the Village and the Village does not have jurisdiction over the facility

## Identified Issues

The municipality has identified the following three areas of concern within their community:

- Slosson Creek moves through the village and flooding occurs anywhere from 2 hours to 24 hours after the rain begins. A cement ditch created by USACE (very old) leads to flooding in a residential area and impacts at a minimum of 30 residents – a good portion of them flood more recently since 2005 (about four flood events) – village has a plan to correct this – taking the road that moves through there and make it a one lane highway and could widen the ditch to allow for more water
- Cook Hill is the highest point in the village and water comes down the hill through ditches to Route 38; dry wells are in bad shape and can't keep up with the water coming down the hill. Floods the two retail areas – drug store and the only grocery store in the area – need to work with the State to fix this problem; the state installed waste water runoff but is very undersized and village needs to work with the State to fix this problem
- Trouts Pond is located at the confluence of Slosson Creek and Owego Creek which causes localized flooding (park and roadways)

### 9.7.5 Capability Assessment

This section identifies the following capabilities of the local jurisdiction:

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

### Planning and Regulatory Capability

The table below summarizes the regulatory tools that are available to the Village of Newark Valley.

**Table 9.7-6. Planning and Regulatory Tools**

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
<b>Planning Capability</b>				
Master Plan	Yes	Local	Village Board of Appeals	Village Master Plan
Capital Improvements Plan	Yes	Local	Board of Trustees	Capital Improvements Plan
Floodplain Management / Basin Plan	No	-	-	-
Stormwater Management Plan	Yes, 2015	County	County Planning/Town of Owego	Tioga County / Town of Owego 2015 – 2020 Stormwater Management Plan
Open Space Plan	No	-	-	-
Stream Corridor Management Plan	No	-	-	-
Watershed Management or Protection Plan	No	-	-	-
Economic Development Plan	Yes	County	Economic Development and Planning Department	Tioga County 2020 Strategic Plan
Comprehensive Emergency Management Plan	Yes	County	County OEM	Comprehensive Emergency Management Plan
Emergency Operation Plan	Yes, 12/15/1993	Local	Mayor	Emergency Disaster Plan
Post-Disaster Recovery Plan	No	-	-	-
Transportation Plan	No	-	-	-
Strategic Recovery Planning Report	No	-	-	-
Other Plans:	-	-	-	-
<b>Regulatory Capability</b>				
Building Code	Yes	State & Local	-	Building Code of NY State
Zoning Ordinance	No	-	Village Board	-
Subdivision Ordinance	Yes	Local	Village Board of Appeals	Chapter 144



Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
NFIP Flood Damage Prevention Ordinance	Yes	Federal, State, Local	Code Enforcement	Chapter 83
NFIP: Cumulative Substantial Damages	No	-	-	-
NFIP: Freeboard	Yes	State, Local	Code Enforcement	State mandated BFE+2 for residential and non-residential construction
Growth Management Ordinances	No	-	-	-
Site Plan Review Requirements	Yes	Local, County	Board of Trustees	Chapter 130
Stormwater Management Ordinance	No	-	-	-
Municipal Separate Storm Sewer System (MS4)	No	-	-	-
Natural Hazard Ordinance	No	-	-	-
Post-Disaster Recovery Ordinance	No	-	-	-
Real Estate Disclosure Requirement	Yes	State	-	NYS mandate, Property Condition Disclosure Act, NY Code - Article 14 §460-467
Other (Special Purpose Ordinances [i.e., sensitive areas, steep slope])	No	-	-	-

### Administrative and Technical Capability

The table below summarizes potential staff and personnel resources available to the Village of Newark Valley.

**Table 9.7-7. Administrative and Technical Capabilities**

Resources	Is this in place? (Yes or No)	Department/ Agency/Position
<b>Administrative Capability</b>		
Planning Board	Yes	Planning Board
Mitigation Planning Committee	No	-
Environmental Board/Commission	No	-
Open Space Board/Committee	No	-
Economic Development Commission/Committee	Yes	County
Maintenance Programs to Reduce Risk	No	-
Mutual Aid Agreements	Yes	Shared Services
<b>Technical/Staffing Capability</b>		
Planner(s) or engineer(s) with knowledge of land development and land management practices	No	-
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	No	-
Planners or engineers with an understanding of natural hazards	No	-

Resources	Is this in place? (Yes or No)	Department/ Agency/Position
NFIP Floodplain Administrator (FPA)	Yes	Public Works Supervisor/Code Enforcement
Surveyor(s)	No	-
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	No	-
Scientist familiar with natural hazards	No	-
Emergency Manager	Yes	Bill Foster/Jim Tornatore
Grant writer(s)	No	-
Staff with expertise or training in benefit/cost analysis	No	-
Professionals trained in conducting damage assessments	No	-

### Fiscal Capability

The table below summarizes financial resources available to the Village of Newark Valley.

**Table 9.7-8. Fiscal Capabilities**

Financial Resources	Accessible or Eligible to Use (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	No
Capital improvements project funding	Yes
Authority to levy taxes for specific purposes	Yes
User fees for water, sewer, gas or electric service	Yes
Impact fees for homebuyers or developers of new development/homes	No
Stormwater utility fee	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	Yes
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	No

### Community Classifications

The table below summarizes classifications for community program available to the Village of Newark Valley.

**Table 9.7-9. Community Classifications**

Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	Class 5	May 2016

Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
NYSDEC Climate Smart Community	No	-	-
Storm Ready Certification	Yes	County	-
Firewise Communities classification	No	-	-
Natural disaster/safety programs in/for schools	No	-	-
Organizations with mitigation focus (advocacy group, non-government)	No	-	-
Public education program/outreach (through website, social media)	No	-	-
Public-private partnership initiatives addressing disaster-related issues	No	-	-

Note:

N/A      Not applicable  
 NP      Not participating  
 -      Unavailable

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

Criteria for classification credits are outlined in the following documents:

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

### Self-Assessment of Capability

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

**Table 9.7-10. Self-Assessment Capability for the Municipality**

Area	Degree of Hazard Mitigation Capability		
	Limited (If limited, what are your obstacles?)	Moderate	High
Planning and regulatory capability	X - Few people have numerous	-	-



Area	Degree of Hazard Mitigation Capability		
	Limited (If limited, what are your obstacles?)	Moderate	High
	roles/responsibilities, limited use of FEMA dollars		
Administrative and technical capability	X - Few people have numerous roles/responsibilities, limited use of FEMA dollars	-	-
Fiscal capability	X - limited use of FEMA dollars	-	-
Community political capability	X - Few people have numerous roles/responsibilities, limited use of FEMA dollars	-	-
Community resiliency capability	X - Few people have numerous roles/responsibilities, limited use of FEMA dollars	-	-
Capability to integrate mitigation into municipal processes and activities	X - Few people have numerous roles/responsibilities, limited use of FEMA dollars	-	-

## National Flood Insurance Program

### NFIP Floodplain Administrator (FPA)

William (Bill) Foster, PW Supervisor/Code Enforcement

### Flood Vulnerability Summary

The municipality does not maintain lists/inventories of properties that have been flood damaged or identify property owners who are interested mitigation (e.g. elevation, acquisition). The FPA noted 3 residential structures and 1 commercial structure that were damaged during flooding events. The FPA does not make substantial damage estimates and noted that no residents are interested in mitigation (elevation or acquisition) or are in the process of mitigation. After the two flooding events in 2018, one property owner has come forward to investigate the possibility of mitigation (e.g. elevation, acquisition).

### Resources

The FPA is the sole person responsible for floodplain administration. The FPA stated that NFIP administration services or functions include various Code assistance such as mapping. The FPA stated that the Village does not provide any education or outreach to the community regarding flood hazards/risk or flood risk reduction through NFIP insurance, mitigation, etc. The FPA feels that time limitations and funding create barriers to running an effective floodplain management program and does not feel adequately supported and trained to fulfill their responsibilities as the municipal floodplain administrator. The FPA would consider attending continuing education and/or certification training on floodplain management if it were offered in the County for all local floodplain administrators.



### Compliance History

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The FPA stated that the community is not in good-standing in the NFIP as no one is available with certification training. However, the Village continues to meet NFIP standards. According to NYSDEC, the most recent Community Assistance Contact (CAC) was held on October 27, 2011 and the most recent Community Assistance Visit (CAV) was conducted on January 8, 2002.

### Regulatory

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The FPA stated that floodplain management regulations/ordinances meet the FEMA and State minimum requirements. The FPA did not consider there to be other local ordinances, plans, or programs that support floodplain management and meeting the NFIP requirements. The FPA had not heard of the Community Rating System in the past but would not be interested in attending a seminar on the program if it were offered locally.

### Integration of Hazard Mitigation into Existing and Future Planning Mechanisms

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

### Planning

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**Hazard Mitigation Plan:** The Village of Newark Valley works with State and county resources to actively take part in the hazard mitigation planning process. The Village provides and maintain links to the HMP website on the municipal website and regularly post notices on the municipal homepage referencing HMP webpages. Information about the hazard mitigation plan process is placed in village newsletters. The Village will continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Section 7.0.

**Master Plan:** The Village of Newark Valley has a Master/Comprehensive Plan (land-use plan). The plan includes areas of natural hazard risk (e.g. flood-prone areas, steep slopes) but does not refer to the Countywide Hazard Mitigation Plan.

**Comprehensive Emergency Management Plan:** The Village of Newark Valley has a Comprehensive Emergency Management Plan. The Plan refers to the Hazard Mitigation plan. The Plan establishes an emergency operations center and assignments for each department. The Village completes ongoing updates of the Comprehensive Emergency Management Plans on an annual basis.

### Regulatory and Enforcement (Ordinances)

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**Subdivision Ordinance:** The Village of Newark Valley's Subdivision Ordinance (Chapter 144 of the municipal Code) states that land to be subdivided shall be of such character that it can be used safely for building purposes without danger to health or peril from fire, flood or other menace; that proper provision shall be made for drainage, water supply, sewerage and other needed improvements; that all proposed lots shall be so laid out and of such size as to be in harmony with the development pattern of the neighboring properties; and that the proposed streets shall compose a convenient system conforming to the Official Map, as such shall be revised from time to time, and shall be properly related to the proposals shown on the Village Master Plan, as periodically revised, and shall be of such width, grade and location as to accommodate the prospective traffic, to facilitate fire protection and to provide access of fire-fighting equipment to buildings.



**Site Plan Review Ordinance:** The Village of Newark Valley's Site Plan Review Ordinance (Chapter 130 of the municipal Code) intends to promote the health, safety and general welfare of the Village. A clean, wholesome, attractive environment is declared to be of importance to the health and safety of the inhabitants of the Village, and in addition such an environment is deemed essential to the maintenance and continued development of the economy of the Village and the general welfare of its inhabitants. It is further the intent of this chapter to ensure the optimum overall conservation, protection, preservation, development and use of the natural and people-related resources of the Village by regulating land use activity within the Village through review and approval of site plans. It is not the intent of this chapter to prohibit per se any land use activity but to allow all land use activities which will meet the standards set forth in this chapter.

The FPA noted that the Site Plan Review Ordinance does not consider natural hazard risk (e.g. the presence of floodplains, steep slopes, etc.) or require developers to take additional actions to mitigate natural hazard risk (e.g. undergrounding utilities, stormwater detention, creating easements in areas/zones of hazard risk).

**Flood Damage Prevention Ordinance:** The Village of Newark Valley's NFIP Flood Damage Protection Ordinance (Chapter 83 of the municipal Code) meets the minimum Federal and State NFIP regulatory requirements. It is the purpose of this chapter to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by provisions designed to:

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

### Operational and Administration

**Mutual Aid Agreements:** The Village works to establish agreements with entities that can provide support with FEMA/SOEM paperwork after disasters; qualified damage assessment personnel, improved post-disaster capabilities, FEMA/SOEM paperwork compilation, submissions, and record-keeping. Agreements are currently in place between Town and Village officials.

**Stream Clearing:** The Village DPW annually cleans all creeks within the Village limits and occasionally contracts additional clearing work to outside groups. The Village also maintains Slosson Creek from Route 38 to eastbank Owego Creek – this helps reduce flooding in the Village.

**Damage Assessments:** The Village works with regional agencies (i.e. County and SOEM) to help develop damage assessment capabilities at the local level through such things as training programs, certification of qualified individuals (e.g. code officials, floodplain managers, engineers).

**Inventories, Datasets, and Vulnerability Assessments:** The Village participates in local, county and/or state level projects and programs to develop improved structure and facility inventories and hazard datasets to support enhanced risk assessment efforts. Such programs may include developing a detailed inventory of critical facilities based upon FEMA’s Comprehensive Data Management System (CDMS) which could be used for various planning and emergency management purposes including supporting the performance of enhanced risk and vulnerability assessments for hazards of concern and supporting state, county and local planning efforts including mitigation (including updates to the State HMP), comprehensive emergency management, debris management, and land use.

Improved structural and facility inventories could incorporate flood, wind and seismic-specific parameters (e.g. first floor elevations, roof types, structure types based on FEMA-154 “Rapid Visual Screening of Buildings for Potential Seismic Hazards” methodologies). It is recognized that these programs will need to be initiated and supported at the County and/or State level, and will require training, tools and funding provided at the county, state and/or federal level.

The NFIP Floodplain Management functions in the Village are carried out by William Foster, Code Enforcement Officer. The Village of Newark Valley does not have a municipal planner or contract planning firm. The Village’s Advisory Board takes into account risk. The Village does not have any Boards or Committees that include functions with respect to managing natural hazard risk.

The Village contracts with firms that have experience with developing Benefit-Cost Analysis and/or perform Substantial Damage Estimates. The Village does not have staff or contract with firms that have experience in preparing grant applications for mitigation projects. Village staff do not receive training or continuing professional education which supports natural hazard risk reduction. The FPA noted any opportunities for training for staff would be beneficial. The FPA stated that the Village had no other hazard management programs in place.

According to the FPA, no Village staff have job descriptions that specifically include identifying and/or implementing mitigation projects/actions or other efforts to reduce natural hazard risk and no staff participate in associations, organizations, groups or other committees that support natural hazard risk reduction and build hazard management capabilities.

### **Funding**

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The Village of Newark Valley’s municipal/operating budget does not include line items for mitigation projects/activities. The Village does not have a Capital Improvements Budget. The Village has pursued FEMA grant funds for mitigation-related projects but does not have any other mechanisms to fiscally support hazard mitigation projects.

### **Education and Outreach**

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The FPA stated there were no public outreach mechanisms/programs in place to inform citizens on natural hazards (e.g. safe use of generators, emergency preparedness, flood hazard information). However, the Village does provide informational handouts on flood insurance.

### **Sheltering, Evacuation, and Temporary Housing**

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



Tioga County, through a buildable land analysis, has identified areas suitable for placing temporary and permanent housing. Refer to Section 4.7.5 in Section 4 (County Profile) of Volume 1 of this plan for a description of resources identified by the county to support municipalities with the identification of evacuation, sheltering, and temporary and permanent housing. Each year, during the annual HMP progress meeting, the municipality will discuss their progress in identifying shelters, evacuation routes, and temporary and permanent housing for their community.

### Temporary and Long-Term Housing

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The Village of Newark Valley did not identify temporary housing for residents displaced by disaster or potential sites suitable for relocating houses of the floodplain and/or building new homes once properties in the floodplain are acquired.

### Evacuation and Sheltering Needs

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The Village of Newark Valley has identified the Municipal Building, Newark Valley School, and the Fire Department as designated emergency shelters. Each facility is ADA compliant, has backup power, and have access to EMS medical services.

## 9.7.6 Mitigation Strategy and Prioritization

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

### Past Mitigation Initiative Status

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

Table 9.7-11. Status of Previous Mitigation Actions

Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
						Cost	Est \$9,000	
1	Village Library (Install Generator and Sump Pump)	Flood		Village DPW	50% Complete	Level of Protection	Eliminate loss of power	1. Discontinue 2. 3. Sump pump have been purchased
						Damages Avoided; Evidence of Success	Eliminate loss of power, allow for continuity of operations, reduces or eliminates flooding of library	
2	Cleaning of all creeks in Village limits.	Flood		Village DPW and contract help	Ongoing Capability	Cost	-	1. Discontinue 2. 3. The village performs this activity on an ongoing basis. Therefore, it will not be included as a mitigation action but identified as a capability of the village.
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
3	Redesign of Slosson creek from 22 Rock to Rt. 38	Flood		Village DPW and contract help	In Progress	Cost		1. Include in 2018 2. Design and Engineer 3.
						Level of Protection		
						Damages Avoided; Evidence of Success		
4	Retrofit structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority. Phase 1: Identify appropriate candidates for retrofitting based on cost-effectiveness versus relocation.	Flood, Severe Storm, Earthquake		Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	Ongoing Capability	Cost	\$16,000 generator. \$15,000 propane furnace.	1. Discontinue 2. Ongoing - residents 1 through 20 Brook Street. Flooding from Slosson Creek. Need engineering studies, plans, and financing 3. The village performs this activity on an ongoing basis. Therefore, it will not be included as a mitigation
						Level of Protection		
						Damages Avoided;		



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
	Phase 2: Where retrofitting is determined to be a viable option, work with property owners toward implementation of that action based on available funding from FEMA and local match availability.					Evidence of Success		action but identified as a capability of the village.
5	Purchase, or relocate structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority. Phase 1: Identify appropriate candidates for relocation based on cost-effectiveness versus retrofitting. Phase 2: Where relocation is determined to be a viable option, work with property owners toward implementation of that action based on available funding from FEMA and local match availability	Flood, Severe Storm		Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	No Progress	Cost		1. Discontinue
						Level of Protection		2.
						Damages Avoided; Evidence of Success		3. At the time of this plan update, this action is not relevant to the Village as there is no interest related to mitigating homes among homeowners. After the two flooding events of 2018 the Village is working with one resident to investigate the available funds from FEMA
6	Maintain compliance with and good-standing in the NFIP including adoption and enforcement of floodplain management requirements (e.g. regulating all new and substantially improved construction in Special Hazard Flood Areas), floodplain identification and mapping, and flood	Flood, Severe Storms		Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, ISO FEMA	Ongoing Capability	Cost		1. Discontinue
						Level of Protection		2.
						Damages Avoided; Evidence of Success		3. The village performs this activity on an ongoing basis. Therefore, it will not be included as a mitigation action but identified as a capability of the village.



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. 3. If discontinue, explain why.
	insurance outreach to the community. Further, continue to meet and/or exceed the minimum NFIP standards and criteria through the following NFIP-related continued compliance actions identified as Initiatives 7 – 16 (below).							
7	Begin the process to adopt higher regulatory standards to manage flood risk (i.e. increased freeboard, cumulative substantial damage/improvements).	Flood, Severe Storms		Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	In Progress	Cost		1. Include in 2018 2. Adopt updated NYS code to ICC standards. 3.
						Level of Protection		
						Damages Avoided; Evidence of Success		
8	Conduct and facilitate community and public education and outreach for residents and businesses to include, but not be limited to, the following to promote and effect natural hazard risk reduction: Provide and maintain links to the HMP website, and regularly post notices on the County/municipal homepage(s) referencing the HMP webpages. Prepare and distribute informational letters to flood vulnerable property owners and neighborhood associations, explaining the availability of mitigation grant funding to mitigate their properties, and	All Hazards		Municipality with support from Planning Partners, NYSOEM, FEMA	Ongoing capability	Cost		1. Discontinue 2.
						Level of Protection		
						Damages Avoided; Evidence of Success		3. Ongoing capability





Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
	instructing them on how they can learn more and implement mitigation. Use email notification systems and newsletters to better educate the public on flood insurance, the availability of mitigation grant funding, and personal natural hazard risk reduction measures. Work with neighborhood associations, civic and business groups to disseminate information on flood insurance and the availability of mitigation grant funding.							
9	Have designated NFIP Floodplain Administrator (FPA) become a Certified Floodplain Manager through the ASFPMP, and pursue relevant continuing education training such as FEMA Benefit-Cost Analysis.	Flood, Severe Storms		NFIP Floodplain Administrator	In Progress	Cost		1. Include in 2018 2. New code officer completed Code classes and will start on NFIP certified classes 3.
						Level of Protection		
						Damages Avoided; Evidence of Success		
10	Participate in the Community Rating System (CRS) to further manage flood risk and reduce flood insurance premiums for NFIP policyholders. This shall start with the submission to FEMA-DHS of a Letter of Intent to join CRS, followed by the completion and submission of an application to the program once the	Flood, Severe Storms		NFIP Floodplain Administrator with support from NYSDEC, NYSOEM, FEMA	In Progress	Cost		1. Include in 2018 2. Upon completion of #9, the Village will consider participating in the CRS program 3.
						Level of Protection		
						Damages Avoided; Evidence of Success		





Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. 3. If discontinue, explain why.
	community's current compliance with the NFIP is established.							
11	Archive elevation certificates	Flood, Severe Storm		NFIP Floodplain Administrator with support from NYSDEC, NYSOEM, FEMA	No Progress	Cost		1. Include in 2018 2. 3.
						Level of Protection		
						Damages Avoided; Evidence of Success		
12	Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Section 7.0	All Hazards		Municipality (via mitigation planning point of contacts) with support from Planning Partners (through their Points of Contact), NYSOEM	Ongoing Capability	Cost		1. Discontinue 2.
						Level of Protection		
						Damages Avoided; Evidence of Success		3. The village performs this activity on an ongoing basis. Therefore, it will not be included as a mitigation action but identified as a capability of the village.
13	Complete the ongoing updates of the Comprehensive Emergency Management Plans	All Hazards		Municipality with support from NYSOEM	Ongoing Capability	Cost		1. Discontinue 2.
						Level of Protection		
						Damages Avoided; Evidence of Success		3. The village performs this activity on an ongoing basis. Therefore, it will not be included as a mitigation action but identified as a capability of the village.
14	Create/enhance/maintain mutual aid agreements with neighboring communities for continuity of operations.	All Hazards		Municipality with support from Surrounding municipalities and County	Ongoing Capability	Cost		1. Discontinue 2.
						Level of Protection		
						Damages Avoided; Evidence of Success		3. The village performs this activity on an ongoing basis. Therefore, it will not be included as a mitigation action but identified as a capability of the village.
15	Identify and develop agreements with entities that can provide support with FEMA/SOEM paperwork after disasters;	All Hazards		Municipality with support from County, NYSOEM, FEMA	Ongoing Capability	Cost		1. Discontinue 2.
						Level of Protection		
						Damages Avoided;		3. The village performs this activity on an ongoing basis. Therefore, it will



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. 3. If discontinue, explain why.
	qualified damage assessment personnel – Improve post-disaster capabilities – damage assessment; FEMA/SOEM paperwork compilation, submissions, record-keeping					Evidence of Success		not be included as a mitigation action but identified as a capability of the village.
16	Work with regional agencies (i.e. County and SOEM) to help develop damage assessment capabilities at the local level through such things as training programs, certification of qualified individuals (e.g. code officials, floodplain managers, engineers).	All Hazards		Municipality with support from County, NYSOEM	Ongoing Capability	Cost		1. Discontinue 2. 3. The village performs this activity on an ongoing basis. Therefore, it will not be included as a mitigation action but identified as a capability of the village.
						Level of Protection		
						Damages Avoided; Evidence of Success		
17	Participate in local, county and/or state level projects and programs to develop improved structure and facility inventories and hazard datasets to support enhanced risk assessment efforts. Such programs may include developing a detailed inventory of critical facilities based upon FEMA's Comprehensive Data Management System (CDMS) which could be used for various planning and emergency management purposes including: Support the performance of enhanced risk and vulnerability assessments for hazards of concern.	All Hazards		HMP Coordinator	Ongoing Capability	Cost		1. Discontinue 2. 3. The village performs this activity on an ongoing basis. Therefore, it will not be included as a mitigation action but identified as a capability of the village.
						Level of Protection		
						Damages Avoided; Evidence of Success		



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. 3. If discontinue, explain why.
	Support state, county and local planning efforts including mitigation (including updates to the State HMP), comprehensive emergency management, debris management, and land use. Improved structural and facility inventories could incorporate flood, wind and seismic-specific parameters (e.g. first floor elevations, roof types, structure types based on FEMA-154 "Rapid Visual Screening of Buildings for Potential Seismic Hazards" methodologies). It is recognized that these programs will need to be initiated and supported at the County and/or State level, and will require training, tools and funding provided at the county, state and/or federal level.							
18	Trout ponds park-Rip Rap bank to protect water line	Flood, Severe Storm		Village Public Works	Complete	Cost	\$28,000	1. Discontinue
						Level of Protection	100-year	2. -
						Damages Avoided; Evidence of Success	Reduce erosion and run-off into pond; increases water quality	3. Completed



### Completed Mitigation Initiatives Not Identified in the Previous Mitigation Strategy

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

- Routine maintenance of Slosson Creek to clear debris
- Repair rip rap on the east branch of Owego Creek
- Planted 125 trees along the north side of Owego Creek to reduce erosion in this area

### Proposed Hazard Mitigation Initiatives for the Plan Update

The Village of Newark Valley participated in a mitigation action workshop on July 11, 2018 and was provided the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 ‘Selecting Appropriate Mitigation Measures for Floodprone Structures’ (March 2007) and FEMA ‘Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards’ (January 2013).

Table 9.7-12 summarizes the comprehensive-range of specific mitigation initiatives the Village of Newark Valley would like to pursue in the future to reduce the effects of hazards. Some of these initiatives may be previous actions carried forward for this plan update. These initiatives are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. The FEMA mitigation action are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

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

Table 9.7-13 provides a summary of the prioritization of all proposed mitigation initiatives for the Plan update.



Table 9.7-12. Proposed Hazard Mitigation Initiatives

Project Number	Project Name	Description of the Problem	Description of the Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues	Estimated Timeline	Lead and Support Agencies	Estimated Cost	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category
V. Newark Valley-1	Cook Hill Runoff & Rt 38 Flood Mitigation	See Action Worksheet	See Action Worksheet	Flood, Severe Storm	All	No	No	1 - 2 years	Village of Newark Valley Public Works	\$4 to \$10 million	Alleviate flooding of Main Street and the business district, protect personal property from flood damage	NYSDOT, USDA (Rural Water), FEMA HMA grants (FMA, HMGP)	High	SIP
V. Newark Valley-2	Owego Creek Cleanout	See Action Worksheet	See Action Worksheet	Flood, Severe Storm	All	No	No	1 year	Village of Newark Valley Public Works	\$50k - \$100,000+	High	HMA, CDBG, NYS DEC, USACE, NYS DOT	High	SIP
V. Newark Valley-3 (former 1)	Village Library Generator	The village library does not have a generator. The library can serve as a shelter in the event of emergency; however, without backup power, it cannot be a safe haven for residents during power outages	Purchase and install a generator at the village library.	All	1-1, 6-3	No	No	1 year	Village DPW in coordination with library staff	\$10,000	High	FEMA HMGP and FMA grants	High	SIP
V. Newark Valley-4 (former 3 and 4)	Slosson Creek Mitigation	See Action Worksheet	See Action Worksheet	Flood, Severe Storm, Severe Winter Storm	1-1, 1, 2, 1-5, 1-9, 4-1, 4-2	No	No	Less than 5 years	Village of Newark Valley Public Works with support from the Town of Newark	\$100,000	High	FEMA HMGP and FMA grants	High	NSP



Table 9.7-12. Proposed Hazard Mitigation Initiatives

Project Number	Project Name	Description of the Problem	Description of the Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues	Estimated Timeline	Lead and Support Agencies	Estimated Cost	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category
									Valley and NYS DOT					
V. Newark Valley-5 (former 7)	Adopt updated NYS code to ICC standards.	Current building codes of the Village are not the updated NYS code	Adopt updated NYS code to ICC standards.	All	All	No	No	Within 1 year	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	Low	Medium	Municipal Budget	High	LPR
V. Newark Valley-6 (former 9)	Code Officer Training	The code enforcement officer is the floodplain administrator for the village; however, they are not a certified floodplain manager.	Have code officer undergo training to be designated NFIP Floodplain Administrator (FPA) become a Certified Floodplain Manager through the ASFPM, and pursue relevant continuing education training such as FEMA Benefit-Cost Analysis. – ongoing capability	Flood, Severe Storms	1-6, 1-8	No	No	Within 2 years	NFIP Floodplain Administrator	Low	Medium	Municipal Budget	Medium	LPR
V. Newark Valley-7 (former 11)	Archive elevation certificates	The elevation certificates for the village are not archived.	locate elevation certificates with assistance and archive them electronically and hard copy in village town hall	Flood, Severe Storm	1-3, 2-3, 3-2	No	No	Within 1 year	NFIP Floodplain Administrator with support from NYSDEC, NYSOEM, FEMA	Low	Medium	Municipal Budget	Medium	LPR



Table 9.7-12. Proposed Hazard Mitigation Initiatives

Project Number	Project Name	Description of the Problem	Description of the Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues	Estimated Timeline	Lead and Support Agencies	Estimated Cost	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category
V. Newark Valley-8	Critical facility – former ladder factory	Property owner/operator may not know their facility is located in the floodplain and the property may be susceptible to flood damage.	Inform property owner of the former ladder factory site that is it located in the 0.2% annual chance floodplain and provide floodproofing options to the property/facility owner	Flood	1, 2	Yes	No	Short Term	Village Floodplain Administrator and facility owner/operator	Low	Medium	Municipal Budget	Medium	LPR, EAP
V. Newark Valley-9	Critical facility – petroleum spill location	Property owner/operator may not know their facility is located in the floodplain and the property may be susceptible to flood damage.	Inform property owner of the petroleum spill location at Maple and Marble Streets that is it located in the 0.2% annual chance floodplain and provide floodproofing options to the property/facility owner	Flood	1, 2	Yes	No	Short Term	Village Floodplain Administrator and facility owner/operator	Low	Medium	Municipal Budget	Medium	LPR, EAP
V. Newark Valley-10	Critical facility – Citizens Telecom Co.	Property owner/operator may not know their facility is located in the floodplain and the property may be susceptible to flood damage.	Inform property owner of the Citizens Telecom Co. that is it located in the 0.2% annual chance floodplain and provide floodproofing options to the property/facility owner	Flood	1, 2	Yes	No	Short Term	Village Floodplain Administrator and facility owner/operator	Low	Medium	Municipal Budget	Medium	LPR, EAP

Table 9.7-12. Proposed Hazard Mitigation Initiatives

Project Number	Project Name	Description of the Problem	Description of the Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues	Estimated Timeline	Lead and Support Agencies	Estimated Cost	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category
V. Newark Valley-11	Critical facility – Well 4	Property owner/operator may not know their facility is located in the floodplain and the property may be susceptible to flood damage.	Inform property owner of the Trout Pond Well 4 that it is located in the 1% and 0.2% annual chance floodplains and provide floodproofing options to the property/facility owner	Flood	1, 2	Yes 	No	Short Term	Village Floodplain Administrator and facility owner/operator	Low	Medium	Municipal Budget	Medium	LPR, EAP

**Notes:**

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

Acronyms and Abbreviations:

CAV	Community Assistance Visit
CRS	Community Rating System
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
FPA	Floodplain Administrator
HMA	Hazard Mitigation Assistance
N/A	Not applicable
NFIP	National Flood Insurance Program
OEM	Office of Emergency Management

Potential FEMA HMA Funding Sources:

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

Timeline:

The time required to complete the project

Cost:

Estimated costs associated with implementation

Benefits:

The benefits that implementation of this project will provide.

Mitigation Category:

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

Critical Facility:


- Yes  - Critical Facility located in 1% floodplain





Table 9.7-13. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community	Total	High / Medium / Low
V. Newark Valley-1	Cook Hill Runoff & Rt 38 Flood Mitigation	1	1	1	1	1	0	0	1	0	1	1	1	1	1	11	High
V. Newark Valley-2	Owego Creek Cleanout	1	1	1	1	1	0	0	1	1	1	1	1	1	1	12	High
V. Newark Valley-3 (former 1)	Village Library Generator	1	1	1	1	0	0	0	0	1	1	1	1	0	0	8	High
V. Newark Valley-4 (former 3 and 4)	Slosson Creek Mitigation	1	1	1	1	1	1	0	1	0	1	1	1	1	1	12	High
V. Newark Valley-5 (former 7)	Adopt updated NYS code to ICC standards.	1	1	1	1	1	1	1	0	0	1	1	1	1	0	11	High
V. Newark Valley-6 (former 9)	Code Officer Training	1	1	1	1	1	0	1	0	0	1	0	1	0	0	8	Medium
V. Newark Valley-7 (former 11)	Archive elevation certificates	1	1	1	1	0	1	1	0	0	1	0	1	0	0	8	Medium
V. Newark Valley-8	Critical facility – former ladder factory	1	1	1	1	0	1	1	0	0	0	0	1	0	0	7	Medium
V. Newark Valley-9	Critical facility – petroleum spill location	1	1	1	1	0	1	1	0	0	0	0	1	0	0	7	Medium
V. Newark Valley-10	Critical facility – Citizens Telecom Co.	1	1	1	1	1	1	1	0	0	0	0	1	0	0	8	Medium
V. Newark Valley-11	Critical facility – Well 4	1	1	1	1	0	1	1	0	0	0	0	1	0	0	7	Medium

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



### **9.7.7 Future Needs to Better Understand Risk/Vulnerability**

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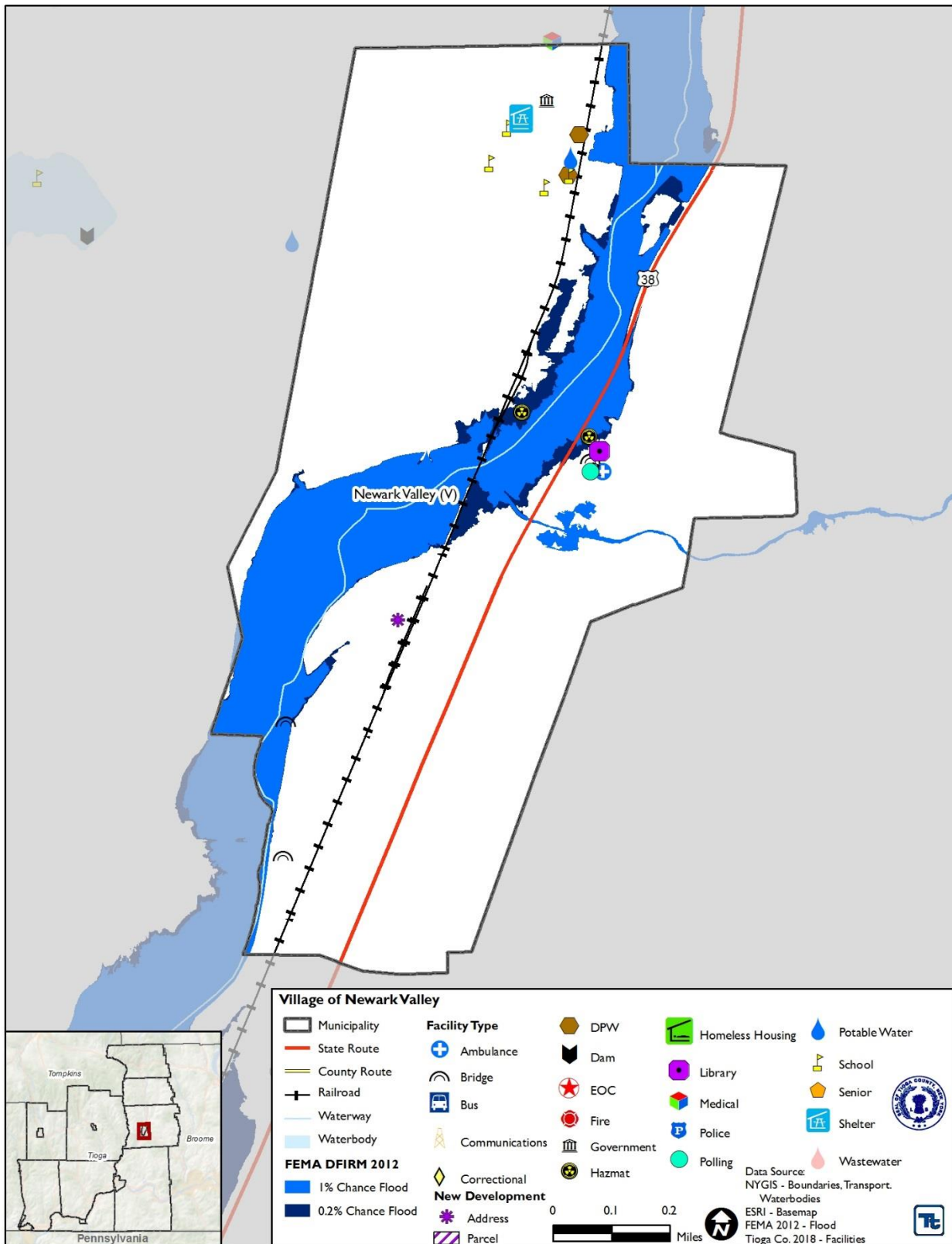
None at this time.

### **9.7.8 Hazard Area Extent and Location**

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

Figure 9.7-1. Village of Newark Valley Hazard Area Extent and Location





Village of Newark Valley Action Worksheet			
<b>Project Name:</b>	Cook Hill Runoff & Rt 38 Flood Mitigation		
<b>Project Number:</b>	V. Newark Valley-1		
<b>Risk / Vulnerability</b>			
<b>Hazard(s) of Concern:</b>	Flash Flooding and Flooding related to heavy rain (Main St/Rt 38 and Business Center)		
<b>Description of the Problem:</b>	Heavy rains and flash flooding from the hill (northwest side of the village between Cook Street, Smallen Ave and NY Rt 38 encompassing Cook Street). The heavy rains from the hill, in the last 10 years, have worn the terrain down to one point at the dead end on Cook Street. Runoff from a newly used driveway has increased water flow to this point and once it reaches it goes down Cook St and runs between the residential homes and newly developed Family Dollar. Family Dollar raised their property and added a ditch line between their store and the homes, it is not maintained and increased in the problem. Once it reaches the bottom of the hill, it floods the parking lot and commercial businesses (Rite Aid and regional grocery store). Impacts Route 38 because the drains cannot maintain the flow of the water. It backups and then floods the Route 38 intersection in the middle of the Village. NYS DOT is not maintaining for cleaning the drainage system. This has been occurring since 1996. Since then, it has occurred six times.		
<b>Action or Project Intended for Implementation</b>			
<b>Description of the Solution:</b>	NYSDOT, Town of Newark Valley, and residents of the properties (impacted areas) all work together to alleviate the problem. This would include NYSDOT maintain the system and installing larger pipes. The Village will need to request permission from the private property owners to install appropriate vegetation to reduce runoff from the hill.		
<b>Is this project related to a Critical Facility?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
<b>Is this project related to a Critical Facility located within the 100-year floodplain?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
<b>Level of Protection:</b>	100-year	<b>Estimated Benefits (losses avoided):</b>	Alleviate flooding of Main Street and the business district, protect personal property from flood damage
<b>Useful Life:</b>	100 years		
<b>Estimated Cost:</b>	\$4 to \$10 million		
<b>Plan for Implementation</b>			
<b>Prioritization:</b>	High	<b>Desired Timeframe for Implementation:</b>	ASAP – once funding is received, within 6 months to start
<b>Estimated Time Required for Project Implementation:</b>	3 Months	<b>Potential Funding Sources:</b>	NYSDOT, USDA (Rural Water), FEMA HMA grants (FMA, HMGP)
<b>Responsible Organization:</b>	Village of Newark Valley Public Works	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	Hazard Mitigation, Master Plan, and Site Development
<b>Three Alternatives Considered (including No Action)</b>			
<b>Alternatives:</b>	<b>Action</b>	<b>Estimated Cost</b>	<b>Evaluation</b>
	No Action	\$0	
	NYSDOT maintains stormwater runoff system	\$100,000	Only NYSDOT can do this and not a long-term solution for the problem
	NYSDOT – increase the size of the pipe	\$1 million	Only NYSDOT can perform this
<b>Progress Report (for plan maintenance)</b>			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			



Village of Newark Valley Action Worksheet		
<b>Project Name:</b>	Cook Hill Runoff & Rt38 Flood Mitigation	
<b>Project Number:</b>	V. Newark Valley-1	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	It would protect a smaller portion of the village but also the village business district, including the only grocery store and pharmacy
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	0	Village would need easements from the property owners, work with the Town of Newark Valley, and the NYSDOT
Fiscal	0	
Environmental	1	
Social	0	
Administrative	1	
Multi-Hazard	1	
Timeline	1	
Agency Champion	1	
Other Community Objectives	1	
<b>Total</b>	11	
<b>Priority (High/Med/Low)</b>	High	



Village of Newark Valley Action Worksheet			
<b>Project Name:</b>	Owego Creek Cleanout		
<b>Project Number:</b>	V. Newark Valley-2		
Risk / Vulnerability			
<b>Hazard(s) of Concern:</b>	Flooding		
<b>Description of the Problem:</b>	Owego Creek will flood during high rain events, causing flooding of the only park in the town and village. This floods the Village of Newark Valley's water system. This facility serves the entire village (approximately 920 homes, two schools of up to 800 students), Town of Newark Valley residents including a UHS building facility, a Headstart facility, and a housing center for senior citizens and low-income residents. The area between Trouts Pond and wetlands which have vegetation blocking water from flowing on the east branch. Maintenance and repairs of this issue have increased. The Creek received funding from FEMA after the 2011 flood (rip-rap on the banks to protect a waterline and the wellhead that is in the park).		
Action or Project Intended for Implementation			
<b>Description of the Solution:</b>	Dredging or cleaning of debris/eliminate barriers, is needed along approximately 1000' of Owego Creek from Water St to Bridge St. This will eliminate flooding from the flood events of recent history.		
<b>Is this project related to a Critical Facility?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
<b>Is this project related to a Critical Facility located within the 100-year floodplain?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
<b>Level of Protection:</b>	500	<b>Estimated Benefits (losses avoided):</b>	repairs to Village of Newark Valley Water System; loss of service of at the Water System as well as loss of water service to 920 homes, 2 schools, one UHS health facility, one headstart facility, and one senior housing center
<b>Useful Life:</b>	50		
<b>Estimated Cost:</b>	\$50k - \$100,000+		
Plan for Implementation			
<b>Prioritization:</b>	High	<b>Desired Timeframe for Implementation:</b>	1 year
<b>Estimated Time Required for Project Implementation:</b>	2 weeks to months (depending on permitting)	<b>Potential Funding Sources:</b>	HMA, CDBG, NYS DEC, USACE, NYS DOT
<b>Responsible Organization:</b>	Village of Newark Valley Public Works with support from NYSDOT and the Town of Newark Valley	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	Master Plan (revised 2006; updating now); Strategic Plan (this is an economic development plan focused more on the Rt38 corridor)
Three Alternatives Considered (including No Action)			
<b>Alternatives:</b>	<b>Action</b>	<b>Estimated Cost</b>	<b>Evaluation</b>
	No Action	\$0	Current problem continues
	Re-build road surface after storm events	\$35,000/event	Costly, not permanent solution continued cost to tax payers
	Elevate structures and water system in the area of Owego Creek	>\$1 million	Not technically feasible; costly
Progress Report (for plan maintenance)			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			



Village of Newark Valley Action Worksheet		
<b>Project Name:</b>	Owego Creek Cleanout	
<b>Project Number:</b>	V. Newark Valley-2	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
<b>Life Safety</b>	1	People using the park; large and most utilized park in northern Tioga County
<b>Property Protection</b>	1	All village-owned equipment and property
<b>Cost-Effectiveness</b>	1	\$140,000 in new playgrounds, two ballparks; spent over \$20,000 just in fencing alone in 2011
<b>Technical</b>	1	Feasible for 100-year floodplain; wouldn't impact downstream
<b>Political</b>	1	
<b>Legal</b>	0	Would need assistance from USACE, NYSDEC and SWCD
<b>Fiscal</b>	0	Need to obtain grant funding
<b>Environmental</b>	1	
<b>Social</b>	1	
<b>Administrative</b>	1	
<b>Multi-Hazard</b>	1	Flood and severe storm
<b>Timeline</b>	1	Completed in 5 years after receiving funds
<b>Agency Champion</b>	1	
<b>Other Community Objectives</b>	1	
<b>Total</b>	12	
<b>Priority (High/Med/Low)</b>	High	



Village of Newark Valley Action Worksheet			
<b>Project Name:</b>	Slosson Creek Mitigation		
<b>Project Number:</b>	V. Newark Valley-4		
<b>Risk / Vulnerability</b>			
<b>Hazard(s) of Concern:</b>	Flood, Severe Storm, Severe Winter Storm		
<b>Description of the Problem:</b>	Flash floods during periods of heavy rain floods approximately 12 homes from Rock Street to Main Street. There is no warning system in place. These houses are cutoff from the rest of the village during a flood.		
<b>Action or Project Intended for Implementation</b>			
<b>Description of the Solution:</b>	Widening/deepening of Slosson Creek. Work with property owners along Brook Street to acquire the homes or implement retrofitting of structures to protect from flooding from Slosson Creek.		
<b>Is this project related to a Critical Facility?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
<b>Is this project related to a Critical Facility located within the 100-year floodplain?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
<b>Level of Protection:</b>	100-year flood event	<b>Estimated Benefits (losses avoided):</b>	Reduce the severity of flash flooding
<b>Useful Life:</b>	25-year		
<b>Estimated Cost:</b>	\$100,000		
<b>Plan for Implementation</b>			
<b>Prioritization:</b>	High	<b>Desired Timeframe for Implementation:</b>	Within 6 months
<b>Estimated Time Required for Project Implementation:</b>	Less than 5 years	<b>Potential Funding Sources:</b>	FEMA HMGP and FMA grants
<b>Responsible Organization:</b>	Village of Newark Valley Public Works with support from the Town of Newark Valley and NYS DOT	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	Master Plan (revised 2006; updating now); Strategic Plan
<b>Three Alternatives Considered (including No Action)</b>			
<b>Alternatives:</b>	<b>Action</b>	<b>Estimated Cost</b>	<b>Evaluation</b>
	No Action	\$0	Current problem continues – continue rebuilding road surface after storms
	Acquisition of houses	>\$1 million	not feasible and likely not cost effective
	Elevations of houses	>\$900,000	would not resolve the occupants and/or emergency services' loss of access to these properties; probably not cost effective
<b>Progress Report (for plan maintenance)</b>			
<b>Date of Status Report:</b>	November 29, 2018		
<b>Report of Progress:</b>	The Village submitted a Letter of Intent (LOI) to NYSDHES for FY 2018 HMA project grants; NYSDHES approved the LOI and the Village received a letter of support from NYS Senator Fred Akshar. The Village will prepare a FEMA 2018 HMA grant application for this project.		
<b>Update Evaluation of the Problem and/or Solution:</b>			





Village of Newark Valley Action Worksheet		
<b>Project Name:</b>	Slosson Creek Mitigation	
<b>Project Number:</b>	V. Newark Valley-4	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
<b>Life Safety</b>	1	Safety of residents, protection of property, helps citizens
<b>Property Protection</b>	1	Protection of property, continuity of operations
<b>Cost-Effectiveness</b>	1	Save village and residents money
<b>Technical</b>	1	Long-term solution to current problem
<b>Political</b>	1	Political support of this project
<b>Legal</b>	1	Bridges owned by residents; town bridge owned by town; but will have to work with NYSDOT and the Town of Newark Valley
<b>Fiscal</b>	0	Need grant funding
<b>Environmental</b>	1	Better for the environment – no overflowing of banks, no runoff or contamination into the creek
<b>Social</b>	0	
<b>Administrative</b>	1	Have the support but will need to contract the work
<b>Multi-Hazard</b>	1	Flood, Severe Storm, Severe Winter Storm
<b>Timeline</b>	1	Less than five years once grant funding is received
<b>Agency Champion</b>	1	Everyone is supporting the project
<b>Other Community Objectives</b>	1	Master Plan, Quality of Life, Public Safety
<b>Total</b>	12	
<b>Priority (High/Med/Low)</b>	High	

## 9.8 TOWN OF NICHOLS

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



### 9.8.1 Hazard Mitigation Plan Point of Contact

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

Primary Point of Contact	Alternate Point of Contact
Barb Crannell, Deputy Supervisor Phone: 607-699-3171 Email: <a href="mailto:bcrannell@stny.rr.com">bcrannell@stny.rr.com</a>	Robert Huseby, Code Enforcement Officer Phone: 607-699-3110 Email: <a href="mailto:nichols-code@stny.rr.com">nichols-code@stny.rr.com</a>
Municipal Floodplain Administrator	
Robert Huseby, Code Enforcement Officer Phone: 607-699-3110 Email: <a href="mailto:nichols-code@stny.rr.com">nichols-code@stny.rr.com</a>	

## 9.8.2 Municipal Profile

The Town of Nichols is in Tioga County, New York. The town consists of 33.7 square miles and is located between the Susquehanna River to the north and west, the Town of Owego to the east and Bradford County, Pennsylvania to the south. The Southern Tier Expressway (New York State Route 17 and future Interstate 86) passes across the town south of the Susquehanna River. New York State Route 282 connects NY-17 to the Pennsylvania state line.

The Town of Nichols is governed by a Town Supervisor and four council members. According to the 2010 Census, the community's population was 2,013.

## Growth/Development Trends

The following table summarizes recent residential/commercial development since 2012 to present and any known or anticipated major residential/commercial development and major infrastructure development that has been identified in the next five years within the municipality. Refer to the map in 9.8.8 of this annex which illustrates the hazard areas along with the location of potential new development.

**Table 9.8-1. Growth and Development**

Property or Development Name	Type (e.g. Res., Comm.)	# of Units / Structures	Location (address and/or Parcel ID)	Known Hazard Zone(s)	Description/Status of Development
<b>Recent Development from 2012 to present</b>					
Army Corps Training	Gov't	3	Stanton Hill Rd	No	Complete
Fed-X	Comm	2	Buck Road	No	Complete
Crown Cork	Comm	1	Berry Road	No	Complete
<b>Known or Anticipated Development in the Next Five (5) Years</b>					
Nichols DPW Garage	Local Gov't	2	Buck Road	No	In Process

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

## 9.8.3 Natural Hazard Event History Specific to the Municipality

Tioga County has a history of natural and non-natural hazard events as detailed in Volume I, Section 5.0 of this plan. A summary of historical events is provided in each of the hazard profiles and includes a chronology of events that have affected the County and its municipalities. For the purpose of this plan update, events that have occurred in the County from 2012 to December 31, 2017 were summarized to indicate the range and impact of hazard events in the community. Information regarding specific damages is included, if available, based on reference material or local sources. This information is presented in the table below. For details of these and additional events, refer to Volume I, Section 5.0 of this plan.

**Table 9.8-2. Hazard Event History**

Dates of Event	Event Type (Disaster Declaration if applicable)	Tioga County Designated?	Summary of Damages/Losses
June 14, 2015	N/A	N/A	In some areas, homes, schools and other businesses were flooded.
March 14, 2017	Yes, DR 4322	Yes	The Town of Nichols had numerous bridge closures including Rt 17/86 East and West, Rt 282 Bridge Closed Road (loss of utilities for homes), and E. River Road leaving the Village. Infrastructure damage included State Line Road (Culvert/Pipe repair and

Dates of Event	Event Type (Disaster Declaration if applicable)	Tioga County Designated?	Summary of Damages/Losses
			ditching), Lower Briggs Hollow (Riprap/Creek Cleanout), Leisure Hill Road (Riprap/Creek Cleanout) and Sacketts Creek (Riprap/Creek Cleanout). Residential properties on Rt 282 sustained structural damage. The Salvation Army provided cleaning supplies to residents.
July 23, 2017	N/A	N/A	Rapid rises of area streams and creeks resulted in severe flash flooding for the Nichols, NY (\$566,987 in damages) and Vestal, NY areas.

*Notes:*

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

## 9.8.4 Hazard Vulnerabilities and Ranking

The hazard profiles in Section 5.0 of this plan have detailed information regarding each plan participant's vulnerability to the identified hazards. This section provides a summary of exposure and impacts from significant hazards of concern as identified by the Town of Nichols. For additional vulnerability information relevant to this jurisdiction, refer to Section 5.0.

### Natural Hazard Risk/Vulnerability Risk Ranking

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

As discussed in Section 5.3 (Hazard Ranking), each participating town or village may have differing degrees of risk exposure and vulnerability compared to Tioga County as a whole. Therefore, each municipality ranked the degree of risk to each hazard as it pertains to their community. The table below summarizes the hazard risk/vulnerability rankings of potential natural hazards for the Town of Nichols. The Town has reviewed the hazard risk/vulnerability risk ranking table and has made adjustments as necessary. During the review of the hazard/vulnerability risk ranking, the Town indicated the following:

- Drought – stay at medium
- Flood – high – the town experiences on an annual basis, causing significant damage each year.
- Severe Winter Weather – change to medium; the town is fully capable of handling winter weather and has sufficient equipment to handle the snow.

**Table 9.8-3. Hazard Risk/Vulnerability Risk Ranking**

Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard <sup>a, b, c</sup>		Probability of Occurrence	Hazard Ranking
Drought	Damage estimate not available		Frequent	Medium
Flood	RCV Exposed to 1% Annual Chance Flood Event	\$17,272,000	Frequent	High*
Severe Storm	100-year MRP	\$0	Frequent	High
	500-year MRP	\$5,847		

Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard <sup>a, b, c</sup>		Probability of Occurrence	Hazard Ranking
Severe Winter Weather	1% GBS	\$1,397,220	Frequent	Medium*
	5% GBS	\$6,986,100		

Notes:

\* Municipality adjusted the hazard ranking

a. Building damage ratio estimates based on FEMA 386-2 (August 2001)

b. Loss estimates for the severe storm and severe winter storm hazards are structural values only and do not include the value of contents.

c. Loss estimates for the flood hazard represents both structure and contents.

### National Flood Insurance Program (NFIP) Summary

The following table summarizes the NFIP statistics for the Town of Nichols.

**Table 9.8-4. NFIP Summary**

Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 100-year Boundary (3)
Nichols (T)	57	96	\$2,925,310.00	23	2	50

Source: FEMA 2018

1. Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA and are current as of February 28, 2018 and are summarized by Community Name. Please note the total number of repetitive loss properties excludes the severe repetitive loss properties. The number of claims represents claims closed by 2/28/2018. Total building and content losses from the claims file provided by FEMA Region 2.
2. Total building and content losses from the claims file provided by FEMA Region 2.

### Critical Facilities at Flood Risk

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

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

**Table 9.8-5. Potential Flood Losses to Critical Facilities**

Name	Type	Exposure		Potential Loss from 1% Flood Event		Addressed by Proposed Action
		1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	
Town of Nichols Highway Garage	DPW	X	X	-	-	T. Nichols-4
Well 1	Well	X	X	-	-	T. Nichols-5

Source: Tioga County GIS, FEMA 2012, and Hazus 4.2

## Identified Issues

The municipality has identified the following vulnerabilities within their community:

- Purchased land on the hill – rental properties on the property but will eventually be used for the town hall

## 9.8.5 Capability Assessment

This section identifies the following capabilities of the local jurisdiction:

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

## Planning and Regulatory Capability

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

**Table 9.8-6. Planning and Regulatory Tools**

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
<b>Planning Capability</b>				
Master Plan	Yes	Local	Town/Village	In Process of Update
Capital Improvements Plan	No	-	-	-
Floodplain Management / Basin Plan	Yes	State/Local	CEO	Chapter 114 of 194 Flood Damage Prevention
Stormwater Management Plan	Yes	County	County Planning/Town of Owego	Tioga County / Town of Owego 2015 – 2020 Stormwater Management Plan
Open Space Plan	Yes	Local	CEO	Ag Plan
Stream Corridor Management Plan	No	-	-	-
Watershed Management or Protection Plan	Yes	Local	CEO	Chapter 114-11
Economic Development Plan	Yes	County	Economic Development and Planning Department	Tioga County 2020 Strategic Plan
Comprehensive Emergency Management Plan	Yes	County	EMO	Comprehensive Emergency Management Plan
Emergency Operation Plan	Yes	Local	Town/Village	In Process
Post-Disaster Recovery Plan	No	-	-	-
Transportation Plan	No	-	-	-
Strategic Recovery Planning Report	No	-	-	-



Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
Other Plans:	Yes	Local	Various Departments	Farmland Preservation / Ag Plan (CEO) NYRCR Tioga – NY Rising Community Reconstruction Plan (March 2014)
<b>Regulatory Capability</b>				
Building Code	Yes	State & Local	CEO	Building Code of NY State
Zoning Ordinance	Yes	Local	ZBA	Not available
Subdivision Ordinance	Yes	Local	CEO	Taylor Road
NFIP Flood Damage Prevention Ordinance	Yes	Federal, State, Local	CEO	Chapter 114
NFIP: Cumulative Substantial Damages	Yes	Local	CEO	Chapter 114
NFIP: Freeboard	Yes	State, Local	CEO	State mandated BFE+2 for residential and non-residential construction
Growth Management Ordinances	No	-	-	-
Site Plan Review Requirements	Yes	Local	Planning Board and ZBA	In Process
Stormwater Management Ordinance	No	-	-	-
Municipal Separate Storm Sewer System (MS4)	No	-	-	-
Natural Hazard Ordinance	No	-	-	-
Post-Disaster Recovery Ordinance	No	-	-	-
Real Estate Disclosure Requirement	Yes	State	NYS Department of State, Real Estate Agent	NYS mandate, Property Condition Disclosure Act, NY Code - Article 14 §460-467
Other (Special Purpose Ordinances [i.e., sensitive areas, steep slope])	No	-	-	-

### Administrative and Technical Capability

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

**Table 9.8-7. Administrative and Technical Capabilities**

Resources	Is this in place? (Yes or No)	Department/ Agency/Position
<b>Administrative Capability</b>		
Planning Board	Yes	Planning Board
Mitigation Planning Committee	No	-
Environmental Board/Commission	No	-

Resources	Is this in place? (Yes or No)	Department/ Agency/Position
Open Space Board/Committee	No	-
Economic Development Commission/Committee	Yes	State/County
Maintenance Programs to Reduce Risk	No	-
Mutual Aid Agreements	Yes	Written agreements in process
<b>Technical/Staffing Capability</b>		
Planner(s) or engineer(s) with knowledge of land development and land management practices	No	-
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	Yes	CEO
Planners or engineers with an understanding of natural hazards	No	-
NFIP Floodplain Administrator (FPA)	Yes	CEO
Surveyor(s)	No	-
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	Yes	County
Scientist familiar with natural hazards	Yes	County Soil & Water
Emergency Manager	Yes	County
Grant writer(s)	No	-
Staff with expertise or training in benefit/cost analysis	No	-
Professionals trained in conducting damage assessments	Yes	CEO

### Fiscal Capability

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

**Table 9.8-8. Fiscal Capabilities**

Financial Resources	Accessible or Eligible to Use (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	Yes
Capital improvements project funding	Yes (Town)
Authority to levy taxes for specific purposes	Yes (Fire District)
User fees for water, sewer, gas or electric service	Yes (Town)
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 (Town)
Open Space Acquisition funding programs	No
Other	No

### Community Classifications

The table below summarizes classifications for community program available to the Town of Nichols.



**Table 9.8-9. Community Classifications**

Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	5/5X	06/2017
NYSDEC Climate Smart Community	No	-	-
Storm Ready Certification	Yes	County	-
Firewise Communities classification	No	-	-
Natural disaster/safety programs in/for schools	N/A	-	-
Organizations with mitigation focus (advocacy group, non-government)	No	-	-
Public education program/outreach (through website, social media)	No	-	-
Public-private partnership initiatives addressing disaster-related issues	Yes	Tioga Opportunities, Inc. / Community Care Network of Nichols / Fire Dept	-

*Note:*

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

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

Criteria for classification credits are outlined in the following documents:

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

### Self-Assessment of Capability

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

**Table 9.8-10. Self-Assessment Capability for the Municipality**

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

### National Flood Insurance Program

#### NFIP Floodplain Administrator (FPA)

Robert Huseby, Code Enforcement Officer

#### Flood Vulnerability Summary

The municipality maintains lists/inventories of properties that have been flood damaged. This inventory identifies property owners who are interested mitigation (e.g. elevation, acquisition). The FPA noted there are 10 residential structures that are damaged during flooding events. The FPA makes substantial damage estimates and noted that 10 residential properties have been declared substantially damaged. The FPA noted several residents are interested in mitigation (elevation or acquisition) or are in the process of mitigation including 1 elevation project, 8 buyout/demolition projects, and 1 property taken by a bank that has been demolished. The funding source for these mitigation projects varies and has included private property owner funds, insurance, and FEMA.

#### Resources

The FPA is the sole person responsible for floodplain administration. The FPA stated that NFIP administration services or functions include permit review, archiving elevation certificates, inspections, damage assessments, record-keeping, and GIS. The FPA stated that the Town does not provide any education or outreach to the community regarding flood hazards/risk or flood risk reduction through NFIP insurance, mitigation, etc. The FPA does not feel there are any barriers to running an effective floodplain management program. The FPA feels adequately supported and trained to fulfill their responsibilities as the municipal floodplain administrator. The FPA would consider attending continuing education and/or certification training on floodplain management if it were offered in the County for all local floodplain administrators.

#### Compliance History

The community in good-standing in the NFIP. According to NYSDEC, the most recent Community Assistance Visit (CAV) was on February 12, 2007. The most recent Community Assistance Contact was on December 20, 2017.

#### Regulatory

The FPA stated that floodplain management regulations/ordinances meet the FEMA and State minimum requirements. The FPA noted that the County Planning Board initiates activities in order to support floodplain



management. The Town has not considered joining the Community Rating System in the past and would not be interested in attending a seminar on the program if it were offered locally.

### Integration of Hazard Mitigation into Existing and Future Planning Mechanisms

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

#### Planning

**Comprehensive Plan:** The Town of Nichols has a Comprehensive Plan (land-use plan) which is currently being updated. The Plan includes areas of natural hazard risk (e.g. flood-prone areas, steep slopes) and refers to the Countywide Hazard Mitigation Plan. Disaster recovery/strategic recovery is included.

**Comprehensive Emergency Management Plan:** The Town of Nichols has a Comprehensive Emergency Management Plan in development. The Plan will refer to the Hazard Mitigation plan.

Other plans include a Growth Plan within the Comprehensive Plan, an Economic Development Plan (County), an Agriculture Plan (includes open space), a Hazard Mitigation Plan (County), and a Watershed/Stream Corridor Management Plan (County). During the updates of the countywide plans, the Town participates in the updates and provides the necessary information to Tioga County.

#### Regulatory and Enforcement (Ordinances)

**Zoning, Subdivision, and Site Plan Review:** The Town of Nichols' Site Plan Review Ordinance is currently in effect and considers natural hazard risk (e.g. the presence of floodplains, steep slopes, etc.). Internet Research and review of existing area regulations are supplied to the Planning Board and/or ZBA to guide their decisions with respect to natural hazard risk management. Municipal zoning and subdivision regulations, and/or site plan review processes require developers to take additional actions to mitigate natural hazard risk (e.g. undergrounding utilities, stormwater detention, creating easements in areas/zones of hazard risk).

**Flood Damage Prevention Ordinance:** During the next update of the flood damage prevention ordinance for the Town of Nichols, the Town will consider adopting higher regulatory standards to manage flood risk.

#### Operational and Administration

The NFIP Floodplain Management functions in the Town are carried out by the Code Enforcement Officer. The Code Enforcement Officer ensures the Town maintains compliance with the NFIP and stays in good standing with the program. The Town of Nichols does not have a municipal planner or contract a planning firm. The Town's Planning Board addresses management of natural hazard risk and compliance with related natural hazard regulations through the Site Plan Review Ordinance and Comprehensive Plan (both being updated) and County and State regulations.

The Town contracts with firms that have experience with developing Benefit-Cost Analysis, perform Substantial Damage Estimates, and have experience in preparing grant applications for mitigation projects. The Code Enforcement Officer receives training which supports natural hazard risk reduction through participation in County and State trainings. The FPA indicated that the Town does not have other hazard management programs in place.



According to the FPA, no Town staff have job descriptions that specifically include identifying and/or implementing mitigation projects/actions or other efforts to reduce natural hazard risk. However, staff participate in the Highway Superintendents Association which is seen by the FPA as supporting natural hazard risk reduction and building hazard management capabilities.

When it comes to county- and state-level projects, the Town of Nichols participates in such projects and provides the necessary information. The Town also works with regional agencies to help develop damage assessment capabilities after a disaster.

### **Funding**

The Town of Nichols' municipal/operating budget does not include line items for mitigation projects/activities. The Town identifies Capital Improvements within the budget. The Town has pursued and been awarded grant funds for mitigation-related projects through NY Rising funds (relocation of the DPW facility – in process). The Town does not have any other mechanisms to fiscally support hazard mitigation projects.

### **Education and Outreach**

The Town does not currently have public outreach mechanisms/programs in place to inform citizens on natural hazards (e.g. safe use of generators, emergency preparedness, flood hazard information). However, the Plannign Board is creating a municipal website, which is in progress, and will provide the capability to promote public outreach and education on natural hazard risk management.

### **Sheltering, Evacuation, and Temporary Housing**

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

Tioga County, through a buildable land analysis, has identified areas suitable for placing temporary and permanent housing. Refer to Section 4.7.5 in Section 4 (County Profile) of Volume 1 of this plan for a description of resources identified by the county to support municipalities with the identification of evacuation, sheltering, and temporary and permanent housing. Each year, during the annual HMP progress meeting, the municipality will discuss their progress in identifying shelters, evacuation routes, and temporary and permanent housing for their community.

### **Temporary and Long-Term Housing**

The Town identified Buck Farm on Buck Road as a potential site suitable for relocating houses out of the floodplain and/or building new homes once properties in the floodplain are acquired.

### **Evacuation and Sheltering Needs**

The Town of Nichols identified the former Nichols Elementary School on Roki Boulevard as an emergency shelter for residents. The capacity of each facility is currently undetermined. The Town is working with the Red Cross/Fire Department to ensure that the Nichols Elementary School is compliant with the NYS Uniform Fire Prevention and Building Code and to establish the former school as an American Red Cross shelter. The capacity is undetermined at this time. The facility accommodates pets and is ADA compliant. The Town is in the process of establishing backup power. The facility provides EMS medical services and food. The Nichols Fire Station on West River Road has also been identified for emergency sheltering of residents. The Town is working on building a new/expanded fire station.

Procedures in place for sheltering and evacuation are provided by the County.



### 9.8.6 Mitigation Strategy and Prioritization

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

#### Past Mitigation Initiative Status

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

Table 9.8-11. Status of Previous Mitigation Actions

Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. 3. If discontinue, explain why.
1	This project entails Flood Mitigation for 5 homes located on East River Road in the Town of Nichols N.Y.	Flood	These homes suffered extensive damage to their lower levels (Finished Basements) that is estimated to be \$225,000 from Tropical Storm Lee September 2011 as well as flooding due to the 100-year flood of 2006.	Town of Nichols Administrator/homeowners, and TCOEM	Complete – FEMA funded	Cost	\$84,150 \$29,860 (2 properties S. Main St & Sunnyside)	1. Discontinue
						Level of Protection	500-year	2. -
						Damages Avoided; Evidence of Success	Properties no longer vulnerable to flood damage	3. Project has been completed; properties were acquired
Wappasening Creek needs to be studied using the Rosgen method in order to stabilize sections of the streams. Several smaller projects have occurred towards the mouth of Wappasening Creek, these have been undertaken to remove gravel and stabilize a portion of the stream. Further work needs to be done on upper portions of the stream. District recognizes there are concerns with this stream – funding is a limitation and interest of landowners to complete work.								
2	See above.	Flood	Wappasening Creek – concerns of gravel deposits, streambank erosion and large woody debris (stream capacity).	Town Highway Department with support of TCSWCD and NCRS	No Progress	Cost	-	1. Include in 2018 HMP – SWCD taking the lead working with the town highway department Wappasening Creek needs to be studied using the Rosgen method in order to stabilize sections of the stream. Several smaller projects have occurred towards the mouth of Wappasening Creek, these have been undertaken to remove gravel and stabilize a portion of the stream. Further work needs to be done on upper portions of the stream. District recognizes there are concerns with this stream – funding is a limitation and interest of landowners to complete work.
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. -
3	Sackett Creek-Perform stream bank stabilization/restoration in accordance with NRCS standards and specifications. Floodwaters caused Sackett Creek to create an entirely new channel into a field coming within 25 feet of the house on the property, depositing a large amount of sediment in the main channel threatening the bridge downstream. To prevent this from occurring in the future the bank will be protected with rip-rap and two in stream structures will be installed to take pressure off the bank while allowing sediment to pass through the reach. Approximately 630 feet of bank protection is needed in this location. There is currently rip rap on both banks down to the bridge below this section and rip rap on the opposite bank of this reach. This							



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps
	causes the stream more erosive force on the bank in question and if not addressed now will continue to be a problem in the future for both the homeowner, and the three business (on both sides) and bridge downstream. The rock work will insure the stream does not continue to erode into a new channel.							
	See above.	Flood	Floodwaters caused Sackett Creek to create an entirely new channel into a field coming within 25 feet of the house on the property, depositing a large amount of sediment in the main channel threatening the bridge downstream. There is currently rip rap on both banks down to the bridge below this section and rip rap on the opposite bank of this reach. This causes the stream more erosive force on the bank in question and if not addressed now will continue to be a problem in the future for both the homeowner, and the three business (on both sides) and bridge downstream.	Town Highway Department with support of TCSWCD and NCRS	No Progress – due to recent flooding events in the Town, this project has not been completed	Cost	-	1. Include in 2018 HMP Sackett Creek-Perform stream bank stabilization/restoration in accordance with NRCS standards and specifications. Floodwaters caused Sackett Creek to create an entirely new channel into a field coming within 25 feet of the house on the property, depositing a large amount of sediment in the main channel threatening the bridge downstream. To prevent this from occurring in the future the bank will be protected with rip-rap and two in stream structures will be installed to take pressure off the bank while allowing sediment to pass through the reach. Approximately 630 feet of bank protection is needed in this location. There is currently rip rap on both banks down to the bridge below this section and rip rap on the opposite bank of this reach. This causes the stream more erosive force on the bank in question and if not addressed now will continue to be a problem in the future for both the homeowner, and the three business (on both sides) and bridge downstream. The rock work will insure the stream does not continue to erode into a new channel.  2.  3. -
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
5	Tioga Downs – stormwater runoff from the site discharges to W. River Road; pipes are not sufficient of size to handle storm events and road floods causing road closures. History of flooding in the area should be evaluated to determine if flooding occurred prior to Tioga Downs, if flooding was not prevalent in the area before the site was developed there may be concerns with SW retention on site and DEC should be contacted.							
	See above	Flood	Stormwater runoff from the site discharges to W.	Town Administration	In Progress	Cost	-	1. Include in 2018 HMP
						Level of Protection	-	2. Under SWCD Review





Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. 3. If discontinue, explain why.
			River Road; pipes are not sufficient of size to handle storm events and road floods causing road closures.	with support from TCSWCD		Damages Avoided; Evidence of Success	-	3. -
6	Lower Briggs Road Site (PW No. 5112107) - Installation of fill and rip rap to protect the road and allow it to be passable as heavy rainfalls created flash flooding on small streams in the town. Lower Briggs Road was severely impacted in several locations by the tributary paralleling the stream.							
	See above	Flood	Heavy rainfalls created flash flooding on small streams in the town. Lower Briggs Road was severely impacted in several locations by the tributary paralleling the stream.	Town Highway Superintendent with support of TCSWD	Complete	Cost	\$300,000	1. Discontinue
						Level of Protection	100-year	2. -
						Damages Avoided; Evidence of Success	Roadways no longer impacted by flooding	3. Project has been completed; therefore, it will not be included in the 2018 HMP Update.
7	Lower Briggs Road Site (PW No. 5112108) - Installation of fill and rip rap to protect the road and allow it to be passable as heavy rainfalls created flash flooding on small streams in the town. Lower Briggs Road was severely impacted in several locations by the tributary paralleling the stream.							
	See above	Flood	Heavy rainfalls created flash flooding on small streams in the town. Lower Briggs Road was severely impacted in several locations by the tributary paralleling the stream.	Town Highway Superintendent with support of TCSWD	Complete	Cost	\$300,000	1. Discontinue
						Level of Protection	100-year	2. -
						Damages Avoided; Evidence of Success	Roadways no longer impacted by flooding	3. Project has been completed; therefore, it will not be included in the 2018 HMP Update.
8	Flood early warning system to mitigate future damage by monitoring two stream locations and river as well as three rain gauges and weather station. The computer stations will be located at Tioga Downs a local race track/casino in a secure room for monitoring of local flood events. The system will be tied into the Federal Flood Warning System and will be manned by community volunteers. A similar system in Corning NY has been working for over 30 years and is credited with proactive emergency service.							
	See above	Flood	The Town currently does not have an early warning system for flooding events. When the river gets to a certain level, residents do not receive an immediate warning. By not	Town of Nichols with support from Tioga County SWCD/TCOEM	No Progress	Cost	-	1. Include in the 2018 HMP
						Level of Protection	-	2. Flood early warning system to mitigate future damage by monitoring two stream locations and river as well as three rain gauges and weather station. The computer stations will be located at Tioga Downs a local race track/casino in a secure room for monitoring of local flood events. The





Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps
			knowing if a flood is imminent or already occurring, residents cannot be as prepared as they could be and do not know if they should evacuate. This puts the safety of residents and town infrastructure at risk as they cannot be as prepared as they should.					<ol style="list-style-type: none"> <li>1. Project to be included in 2018 HMP or Discontinue</li> <li>2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate).</li> <li>3. 3. If discontinue, explain why.</li> </ol>
	Mt. Pleasant Road-Site #1-During the flood of September 2011, the culvert pipe crossing Mt. Pleasant Road sustained severe erosion around the outlet of the pipe; leaving the pipe exposed. NRCS and SWCD identified this site for outlet protection which will protect the pipe and road from erosion during future events. Also, a plunge pool will be constructed to stop a head cut in the stream bed.							
9	See above	Flood	During the flood of September 2011, the culvert pipe crossing Mt. Pleasant Road sustained severe erosion around the outlet of the pipe; leaving the pipe exposed.	SWCD and NRCS with support from the Town Highway Department	Complete	Cost	\$100,000	1. Discontinue
						Level of Protection	100-year	2. -
						Damages Avoided; Evidence of Success	Roadways no longer impacted by flooding	3. Project has been completed; therefore, it will not be included in the 2018 HMP Update.
	Mt. Pleasant Road-Site #2-During the September 2011 flood, heavy rain falls created flash flood phenomenon in our streams. The stream that parallels Mt. Pleasant Road sustained severe streambank erosion causing damage to the road shoulder and road. NRCS and SWCD identified this site for rock rip rap protection which will protect the road from erosion during future events							
10	See above	Flood	During the September 2011 flood, heavy rain falls created flash flood phenomenon in our streams. The stream that parallels Mt. Pleasant Road sustained severe streambank erosion causing damage to the road shoulder and road.	SWCD and NRCS	Complete	Cost	\$150,000	1. Discontinue
						Level of Protection	100-year	2. -
						Damages Avoided; Evidence of Success	Roadways no longer impacted by flooding	3. Project has been completed; therefore, it will not be included in the 2018 HMP Update.
11	Retrofit structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority.							



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps
	Phase 1: Identify appropriate candidates for retrofitting based on cost-effectiveness versus relocation. <b>Residences on West River Road have been identified as candidates for residential home elevations.</b> Phase 2: Where retrofitting is determined to be a viable option, work with property owners toward implementation of that action based on available funding from FEMA and local match availability.							
	See above	Flood, Severe Storm, Earthquake		Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	Complete – FEMA grant funding	Cost	\$500,000	1. Discontinue
Level of Protection						100-year	2. -	
Damages Avoided; Evidence of Success						Reduce / eliminate flood damage to these properties	3. Project has been completed; therefore, it will not be included in the 2018 HMP Update.	
	Purchase, or relocate structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority. Phase 1: Identify appropriate candidates for relocation based on cost-effectiveness versus retrofitting. <b>Residences on West River Road, South Main Street, Sunnyside Drive, and East River Road have been identified to be demolished and to turn the land into green space for the Town.</b> Phase 2: Where relocation is determined to be a viable option, work with property owners toward implementation of that action based on available funding from FEMA and local match availability.							
12	See above	Flood, Severe Storm		Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	Complete	Cost	\$500,000	1. Discontinue
Level of Protection						100-year	2. -	
Damages Avoided; Evidence of Success						Properties have been acquired; therefore, buildings no longer sustain damage	3. South Main and Sunnyside are complete and demolished West River Road - complete	
	Maintain compliance with and good-standing in the NFIP including adoption and enforcement of floodplain management requirements (e.g. regulating all new and substantially improved construction in Special Hazard Flood Areas), floodplain identification and mapping, and flood insurance outreach to the community. Further, continue to meet and/or exceed the minimum NFIP standards and criteria through the following NFIP-related continued compliance actions identified as Initiatives 10 – 19 (below).							
13	See above	Flood, Severe Storms	This is an ongoing capability for the Town. Refer to ‘Integration of Hazard Mitigation into Existing and Future Planning Mechanisms’ above.	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, ISO FEMA	Ongoing Capability	Cost	-	1. Discontinue
Level of Protection						-	2. -	
Damages Avoided; Evidence of Success						-	3. This is an ongoing capability for the Town. Refer to ‘Integration of Hazard Mitigation into Existing and Future Planning Mechanisms’ above.	
14	Begin the process to adopt higher regulatory standards to manage	Flood, Severe Storms	This is an ongoing capability for the Town. Refer to	Municipality (via Municipal Engineer/NFIP	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps
	flood risk (i.e. increased freeboard, cumulative substantial damage/improvements).		'Integration of Hazard Mitigation into Existing and Future Planning Mechanisms' above.	Floodplain Administrator) with support from NYSOEM, FEMA		Damages Avoided; Evidence of Success	-	<ol style="list-style-type: none"> <li>1. Project to be included in 2018 HMP or Discontinue</li> <li>2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate).</li> <li>3. 3. If discontinue, explain why.</li> </ol>
15	Conduct and facilitate community and public education and outreach for residents and businesses to include, but not be limited to, the following to promote and effect natural hazard risk reduction: <ul style="list-style-type: none"> <li>• Provide and maintain links to the HMP website, and regularly post notices on the County/municipal homepage(s) referencing the HMP webpages.</li> <li>• Prepare and distribute informational letters to flood vulnerable property owners and neighborhood associations, explaining the availability of mitigation grant funding to mitigate their properties, and instructing them on how they can learn more and implement mitigation.</li> <li>• Use email notification systems and newsletters to better educate the public on flood insurance, the availability of mitigation grant funding, and personal natural hazard risk reduction measures.</li> <li>• Work with neighborhood associations, civic and business groups to disseminate information on flood insurance and the availability of mitigation grant funding</li> </ul>							
	See above	All Hazards	This is an ongoing capability for the Town. Refer to 'Integration of Hazard Mitigation into Existing and Future Planning Mechanisms' above.	Municipality with support from Planning Partners, NYSOEM, FEMA	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. This is an ongoing capability for the Town. Refer to 'Integration of Hazard Mitigation into Existing and Future Planning Mechanisms' above.
16	Have designated NFIP Floodplain Administrator (FPA) become a Certified Floodplain Manager through the ASFP, and pursue relevant continuing education training such as FEMA Benefit-Cost Analysis.	Flood, Severe Storms	This is an ongoing capability for the Town. Refer to 'Integration of Hazard Mitigation into Existing and Future Planning Mechanisms' above.	NFIP Floodplain Administrator	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. This is an ongoing capability for the Town. Refer to 'Integration of Hazard Mitigation into Existing and Future Planning Mechanisms' above.
17	Archive elevation certificates	Flood, Severe Storms	This is an ongoing capability for the Town. Refer to 'Integration of Hazard Mitigation into Existing and Future Planning Mechanisms' above.	NFIP Floodplain Administrator	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. This is an ongoing capability for the Town. Refer to 'Integration of Hazard Mitigation into Existing and Future Planning Mechanisms' above.
18	Continue to support the implementation, monitoring,	All Hazards	This is an ongoing capability for the Town. Refer to	Municipality (via mitigation planning point	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. 3. If discontinue, explain why.
	maintenance, and updating of this Plan, as defined in Section 7.0		‘Integration of Hazard Mitigation into Existing and Future Planning Mechanisms’ above.	of contacts) with support from Planning Partners (through their Points of Contact), NYSOEM		Damages Avoided; Evidence of Success	-	3. This is an ongoing capability for the Town. Refer to ‘Integration of Hazard Mitigation into Existing and Future Planning Mechanisms’ above.
19	Complete the ongoing updates of the Comprehensive Emergency Management Plans	All Hazards	This is an ongoing capability for the Town. Refer to ‘Integration of Hazard Mitigation into Existing and Future Planning Mechanisms’ above.	Municipality with support from NYSOEM	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. This is an ongoing capability for the Town. Refer to ‘Integration of Hazard Mitigation into Existing and Future Planning Mechanisms’ above.
20	Create/enhance/ maintain mutual aid agreements with neighboring communities for continuity of operations.	All Hazards	This is an ongoing capability for the Town. Refer to ‘Integration of Hazard Mitigation into Existing and Future Planning Mechanisms’ above.	Municipality with support from Surrounding municipalities and County	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. This is an ongoing capability for the Town. Refer to ‘Integration of Hazard Mitigation into Existing and Future Planning Mechanisms’ above.
21	Identify and develop agreements with entities that can provide support with FEMA/SOEM paperwork after disasters; qualified damage assessment personnel – Improve post-disaster capabilities – damage assessment; FEMA/SOEM paperwork compilation, submissions, record-keeping							
	See above	All Hazards	This is an ongoing capability for the Town. Refer to ‘Integration of Hazard Mitigation into Existing and Future Planning Mechanisms’ above.	Municipality with support from County, NYSOEM, FEMA	Ongoing Capability – town works with FEMA after disasters to prepare the paperwork	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. This is an ongoing capability for the Town. Refer to ‘Integration of Hazard Mitigation into Existing and Future Planning Mechanisms’ above.
22	Work with regional agencies (i.e. County and SOEM) to help develop damage assessment capabilities at the local level through such things as training programs, certification of qualified individuals (e.g. code officials, floodplain managers, engineers).							
	See above	All Hazards	This is an ongoing capability for the Town. Refer to ‘Integration of Hazard Mitigation into Existing and	Municipality with support from County, NYSOEM	Ongoing Capability – working with the County OEM to develop a process	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided;	-	3. This is an ongoing capability for the Town. Refer to ‘Integration of Hazard



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps
			Future Planning Mechanisms' above.			Evidence of Success		1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. 3. If discontinue, explain why.
	Mitigation into Existing and Future Planning Mechanisms' above.							
23	Participate in local, county and/or state level projects and programs to develop improved structure and facility inventories and hazard datasets to support enhanced risk assessment efforts. Such programs may include developing a detailed inventory of critical facilities based upon FEMA's Comprehensive Data Management System (CDMS) which could be used for various planning and emergency management purposes including: <ul style="list-style-type: none"><li>• Support the performance of enhanced risk and vulnerability assessments for hazards of concern.</li><li>• Support state, county and local planning efforts including mitigation (including updates to the State HMP), comprehensive emergency management, debris management, and land use.</li><li>• Improved structural and facility inventories could incorporate flood, wind and seismic-specific parameters (e.g. first floor elevations, roof types, structure types based on FEMA-154 "Rapid Visual Screening of Buildings for Potential Seismic Hazards" methodologies). It is recognized that these programs will need to be initiated and supported at the County and/or State level, and will require training, tools and funding provided at the county, state and/or federal level.</li></ul>							
	See above	All Hazards	This is an ongoing capability for the Town. Refer to 'Integration of Hazard Mitigation into Existing and Future Planning Mechanisms' above.	HMP Coordinator	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. This is an ongoing capability for the Town. Refer to 'Integration of Hazard Mitigation into Existing and Future Planning Mechanisms' above.



### Completed Mitigation Initiatives Not Identified in the Previous Mitigation Strategy

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

- Through a grant from NY Rising, the Town is relocating the DPW facility.
- Working with the Village, created a residential shelter to use in the event of emergencies.

### Proposed Hazard Mitigation Initiatives for the Plan Update

Together with FEMA and NYSDHSES, the County hosted a mitigation action workshop in July 2018 where each municipality was provided the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 ‘Selecting Appropriate Mitigation Measures for Floodprone Structures’ (March 2007) and FEMA ‘Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards’ (January 2013).

Table 9.8-12 summarizes the comprehensive-range of specific mitigation initiatives the Town of Nichols would like to pursue in the future to reduce the effects of hazards. Some of these initiatives may be previous actions carried forward for this plan update. These initiatives are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. Both the four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

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

Table 9.8-13 provides a summary of the prioritization of all proposed mitigation initiatives for the Plan update.

**Table 9.8-12. Proposed Hazard Mitigation Initiatives**


Project Number	Project Name	Description of the Problem	Description of the Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues?	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Potential Funding Sources	Estimated Timeline	Priority	Mitigation Category
T. Nichols-1 (previous action)	Wappasening Creek Study	See action worksheet	See action worksheet	Flood	1, 4	No	No	Town Highway Department with support of TCSWCD and NCRS	Gain a better understanding of how to stabilize the sections of the stream	High (greater than \$100,000)	FEMA HMGP or EWP	6-12 months	High	NSP
T. Nichols-2 (previous action)	Sackett Creek Stream Bank Stabilization / Restoration	See action worksheet	See action worksheet	Flood, Severe Storm	1, 4	No	No	Town Highway Department with support of TCSWCD and NCRS	Reduces or eliminates the erosion along the creek and reduces or eliminates damage to homes, businesses, and downstream bridge.	\$150,000	FEMA HMGP or EWP	6-12 months	High	SIP, NSP
T. Nichols-3 (previous action)	Flood Early Warning System	See action worksheet	See action worksheet	Flood	1, 4	No	No	Town of Nichols with support from County Emergency Services and SWCD	Increased safety of town residents; reduce risks to public safety and property damage by allowing more responsive evacuation and/or flood prevention measures	\$150,000	NY Rising, FEMA FMA or HMGP	6-12 months	High	EAP
T. Nichols-4	Town of Nichols Highway Garage Relocation	Town Highway Garage is located in the floodplain and has been routinely flooded. This	Construct a new facility to house the Town's highway equipment and DPW offices located out of the floodplain.	Flood	All	Yes 	No	Town of Nichols Highway Department with support from the County	Protect the highway equipment and supplies from being damaged by floods; provides a	\$4.25 million	NY Rising, FEMA FMA or HMGP	15 months	High	SIP



Table 9.8-12. Proposed Hazard Mitigation Initiatives


Project Number	Project Name	Description of the Problem	Description of the Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues?	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Potential Funding Sources	Estimated Timeline	Priority	Mitigation Category
		prevents the Highway Dept. from functioning during flood events.							safe working environmental for DPW staff					
T. Nichols-5	Well 1	Well 1 is in the floodplain and at risk during flood events.	Inform the facility operator that the well is in the floodplain. Provide them with information on how to mitigate the well and protect it to the 500-year event.	Flood	1, 4	Yes 	No	Facility Operator with support from the Town	Allow well to function during flood events and provide water to residents	Medium (between \$10,000 and \$100,000)	FEMA HMGP and FMA	6 to 12 months	Medium	EAP
T. Nichols-6	Resiliency Tools Update	When Hurricane Irene and Tropical Storm Lee hit the Southern Tier in 2011, the Town of Nichols did not have adequate land use tools in place to reduce the negative effects of the associated flooding.	To improve resiliency and lessen the impact of storms on homes, businesses, and key assets during future floods, the Town of Nichols will update and adopt its Comprehensive Plan, update its zoning ordinance to reflect recent experience with the effect of storms on assets in the community, and customize its Flood Damage Prevention Local Law.	All	All	No	No	Town Board, Code Enforcement	Assist town in securing future grant opportunities and guiding future investments; promote sustainable development and minimize negative environmental impacts; contribute to the health and safety of residents	\$75,000	Town Budget, NY Rising	1.5 years	High	LPR





Table 9.8-12. Proposed Hazard Mitigation Initiatives

Project Number	Project Name	Description of the Problem	Description of the Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues?	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Potential Funding Sources	Estimated Timeline	Priority	Mitigation Category
T. Nichols-7	Bridge and Culvert Inspection and Upgrades	Extensive flooding occurs in the town because of clogged culverts and pinch points at vehicle crossings.	Conduct a comprehensive bridge/culvert inspection and appraisal and make necessary upgrades to reduce vulnerability in the Town of Nichols.	Severe Storm, Severe Winter Storm, Flood		No	No	Town Public Works	Reduce potential for flooded roadways; keep culverts functioning properly	\$258,000	Town Budget, NY Rising	1.5 years	High	SIP
T. Nichols-8	Revitalization Plan Town of Nichols	Many businesses in the Town and Village of Nichols are struggling to recover after the flooding associated with Hurricane Irene and Tropical Storm Lee. Rising flood and groundwater severely damaged buildings and merchandise, and caused businesses to close their doors temporarily during storm clean up.	Develop and implement a revitalization plan to enhance tourism and economic development in Nichols including: streetscape enhancements, wayfinding and gateway signage, beautification enhancements to the two existing DEC boat launches, and development of a 5-mile multi-purpose shoreline trail connecting Tioga Downs to the commercial district and recreation areas.	All	All	No	No	Town Board with support from the Village and Tioga County	Create jobs and increase tourism opportunities; create an improved commercial center that supports business activities	\$3,000,000	NY Rising, Municipal Budget	1.5 years	High	LPR

**Table 9.8-12. Proposed Hazard Mitigation Initiatives**


Project Number	Project Name	Description of the Problem	Description of the Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues?	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Potential Funding Sources	Estimated Timeline	Priority	Mitigation Category
T. Nichols-9 (see V. Nichols-6)	Joint Fire Station with the Village of Nichols	The Joint Fire Station located on West River Road in the Village of Nichols and serves both the Town and Village of Nichols. It is in the floodplain and has experienced structural and equipment damages.	Current designing project to remediate the current fire house and expand capacity with a new addition. The goal is to make the structure more flood resilient by elevating the utilities and installing flood-resistant doors. The retrofit of the building will protect to the 500-year flood level and alleviate groundwater flooding. DASNY is currently reviewing the building specifications.	All	All	Yes 	No	Nichols Joint Fire District	Better service to the community. Improved safety to volunteer firefighters and residents.	\$1,500,000	NY Rising, FEMA Assistance to Firefighters Grant, Joint Fire District	24 months	High	SIP
T. Nichols-10	Healthy Main Street Economy / Sewer Expansion, Town and Village of Nichols	The majority of residential and commercial structures located in the Town and Village of Nichols are served by individual septic systems. As flood and groundwater rose during	Extend the municipal sewer system along River Road to the commercial district in the Village of Nichols to provide sanitary sewer for the Village and surrounding area within the Town of Nichols	All	All	No	No	Town Public Works with support from Village	Potential economic benefits if additional economic development exceeds the system's capital cost, annual debt service and operations / maintenance costs; improve the ability	\$10,400,000	NY Rising, USDA Water & Waste Disposal Grant	2 years	Medium	SIP

Table 9.8-12. Proposed Hazard Mitigation Initiatives

Project Number	Project Name	Description of the Problem	Description of the Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues?	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Potential Funding Sources	Estimated Timeline	Priority	Mitigation Category
		Tropical Storm Lee, many of these systems failed, resulting in environmental contamination, and in several cases, the demolition of buildings and loss of business. The Town does have a municipal sewer system in place that serves the Best Buy Distribution Center and Army Reserve Center, located on Stanton Hill Road.							to meet regulatory requirements related to the quality of treated effluent discharges to the Susquehanna River					

Notes:

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

Acronyms and Abbreviations:

CAV	Community Assistance Visit
CRS	Community Rating System
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
FPA	Floodplain Administrator
HMA	Hazard Mitigation Assistance
N/A	Not applicable
NFIP	National Flood Insurance Program

Potential FEMA HMA Funding Sources:

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

Timeline:

The time required to complete the project

Cost:

Estimated costs associated with implementation

Benefits:

The benefits that implementation of this project will provide.



OEM Office of Emergency Management

Mitigation Category:

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

Critical Facility:


- Yes  - Critical Facility located in 1% floodplain



Table 9.8-13. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community	Total	High / Medium / Low
T. Nichols-1 (previous action)	Wappasening Creek Study	1	1	1	1	0	1	0	1	1	1	1	1	0	0	10	High
T. Nichols-2 (previous action)	Sackett Creek Stream Bank Stabilization / Restoration	1	1	1	1	0	1	0	1	1	1	1	1	0	0	10	High
T. Nichols-3 (previous action)	Flood Early Warning System	1	1	1	1	1	1	0	0	1	1	0	1	0	0	9	High
T. Nichols-4	Town of Nichols Highway Garage Relocation	1	1	1	1	1	0	1	0	1	1	1	1	1	0	11	High
T. Nichols-5	Well 1	1	1	1	1	0	0	0	0	1	1	0	1	0	0	7	Medium
T. Nichols-6	Resiliency Tools Update	1	1	1	1	1	1	1	0	0	1	1	1	1	0	11	High
T. Nichols-7	Bridge and Culvert Inspection and Upgrades	1	1	1	1	0	1	0	1	1	1	1	1	0	0	10	High
T. Nichols-8	Revitalization Plan Town of Nichols	1	1	1	1	1	1	1	0	0	1	1	1	1	0	11	High
T. Nichols-9 (see V. Nichols-6)	Joint Fire Station with the Village of Nichols	1	1	1	1	1	1	1	0	1	1	1	1	1	0	12	High
T. Nichols-10	Healthy Main Street Economy / Sewer Expansion, Town and Village of Nichols	1	1	1	1	0	0	0	1	1	0	1	1	0	0	8	Medium

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



### **9.8.7 Future Needs To Better Understand Risk/Vulnerability**

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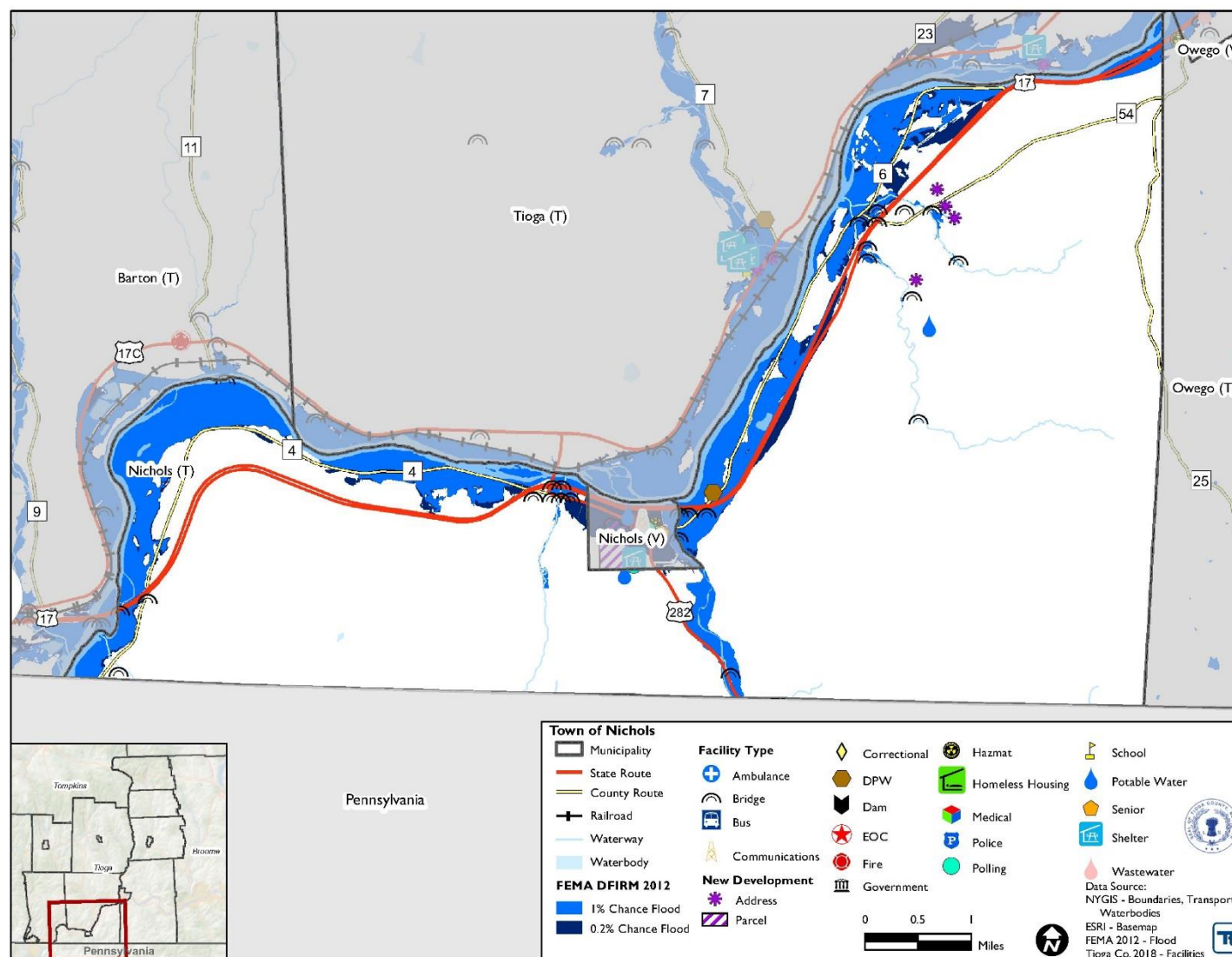
None at this time.

### **9.8.8 Hazard Area Extent and Location**

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Hazard area extent and location maps have been generated for the Town of Nichols that illustrate the probable areas impacted within the municipality. These maps are based on the best available data at the time of the preparation of this plan, and are considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the Town of Nichols has significant exposure. These maps are illustrated in the hazard profiles within Section 5.4, Volume I of this Plan. A map of the Town of Nichols hazard area extent and location is provided on the following page. This map indicates the location of the regulatory floodplain as well as identified critical facilities within the municipality.

Figure 9.8-1. Town of Nichols Hazard Area Extent and Location





Town of Nichols Action Worksheet			
<b>Project Name:</b>	Wappasening Creek Study		
<b>Project Number:</b>	T. Nichols-1		
Risk / Vulnerability			
<b>Hazard(s) of Concern:</b>	Flood, Severe Storm		
<b>Description of the Problem:</b>	Wappasening Creek – concerns of gravel deposits, streambank erosion and large woody debris (stream capacity).		
Action or Project Intended for Implementation			
<b>Description of the Solution:</b>	Wappasening Creek needs to be studied using the Rosgen method in order to stabilize sections of the stream. Several smaller projects have occurred towards the mouth of Wappasening Creek, these have been undertaken to remove gravel and stabilize a portion of the stream. Further work needs to be done on upper portions of the stream. District recognizes there are concerns with this stream – funding is a limitation and interest of landowners to complete work.		
<b>Is this project related to a Critical Facility?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
<b>Is this project related to a Critical Facility located within the 100-year floodplain?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
<b>Level of Protection:</b>	100-year flood	<b>Estimated Benefits (losses avoided):</b>	Gain a better understanding of how to stabilize the sections of the stream
<b>Useful Life:</b>	20 years		
<b>Estimated Cost:</b>	>\$100,000		
Plan for Implementation			
<b>Prioritization:</b>	High	<b>Desired Timeframe for Implementation:</b>	Within 6 months after receiving funds
<b>Estimated Time Required for Project Implementation:</b>	6-12 months	<b>Potential Funding Sources:</b>	FEMA HMGP or EWP
<b>Responsible Organization:</b>	Town Highway Department with support of TCSWCD and NCRS	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	Hazard Mitigation
Three Alternatives Considered (including No Action)			
<b>Alternatives:</b>	<b>Action</b>	<b>Estimated Cost</b>	<b>Evaluation</b>
	No Action	\$0	Problem continues
	Routine maintenance of the Creek	\$20,000	Temporary solution that will not prevent future erosion
Progress Report (for plan maintenance)			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			





Town of Nichols Action Worksheet		
<b>Project Name:</b>	Wappasening Creek Study	
<b>Project Number:</b>	T. Nichols-1	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
<b>Life Safety</b>	1	Flooding of Wappasening Creek impacts landowners and can cause hard if residents are flooded
<b>Property Protection</b>	1	Creek floods property and stream bank erosion can impact adjacent land
<b>Cost-Effectiveness</b>	1	The study will need to be performed to ensure maximize effectiveness of further mitigation actions.
<b>Technical</b>	1	Technical requirements of this project are feasible to implement.
<b>Political</b>	0	
<b>Legal</b>	1	Project area located within the Town of Nichols
<b>Fiscal</b>	0	
<b>Environmental</b>	1	The study will need to be performed to ensure maximize effectiveness of further mitigation actions.
<b>Social</b>	1	
<b>Administrative</b>	1	
<b>Multi-Hazard</b>	1	Flooding, Severe Storm
<b>Timeline</b>	1	Project can be completed within 6 months of receiving funding
<b>Agency Champion</b>	0	
<b>Other Community Objectives</b>	0	
<b>Total</b>	10	
<b>Priority (High/Med/Low)</b>	High	



Town of Nichols Action Worksheet			
<b>Project Name:</b>	Flood Early Warning System		
<b>Project Number:</b>	T. Nichols-3		
Risk / Vulnerability			
<b>Hazard(s) of Concern:</b>	Flood		
<b>Description of the Problem:</b>	The Town currently does not have an early warning system for flooding events. When the river gets to a certain level, residents do not receive an immediate warning. By not knowing if a flood is imminent or already occurring, residents cannot be as prepared as they could be and do not know if they should evacuate. This puts the safety of residents and town infrastructure at risk as they cannot be as prepared as they should.		
Action or Project Intended for Implementation			
<b>Description of the Solution:</b>	Flood early warning system to mitigate future damage by monitoring two stream locations and river as well as three rain gauges and weather station. The computer stations will be located at Tioga Downs a local race track/casino in a secure room for monitoring of local flood events. The system will be tied into the Federal Flood Warning System and will be manned by community volunteers. A similar system in Corning NY has been working for over 30 years and is credited with proactive emergency service.		
<b>Is this project related to a Critical Facility?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
<b>Is this project related to a Critical Facility located within the 100-year floodplain?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
<b>Level of Protection:</b>	Residents from 100-year flood	<b>Estimated Benefits (losses avoided):</b>	Increased safety of town residents; reduce risks to public safety and property damage by allowing more responsive evacuation and/or flood prevention measures
<b>Useful Life:</b>	20+ years with routine maintenance		
<b>Estimated Cost:</b>	\$150,000		
Plan for Implementation			
<b>Prioritization:</b>	High	<b>Desired Timeframe for Implementation:</b>	Within 6 months after funding received
<b>Estimated Time Required for Project Implementation:</b>	6 months to one year	<b>Potential Funding Sources:</b>	NY Rising, FEMA FMA or HMGP
<b>Responsible Organization:</b>	Town of Tioga with support from County Emergency Services and SWCD	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	Hazard Mitigation, Emergency Management
Three Alternatives Considered (including No Action)			
<b>Alternatives:</b>	<b>Action</b>	<b>Estimated Cost</b>	<b>Evaluation</b>
	No Action	\$0	Current problem continues
	Elevate floodprone homes in the Town	>\$500,000	Costly; some homeowners may not want to elevate
	Acquire floodprone homes	>\$1 million	Costly; homeowners do not want to leave; loss of taxes in the town
Progress Report (for plan maintenance)			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			



Town of Nichols Action Worksheet		
<b>Project Name:</b>	Flood Early Warning System	
<b>Project Number:</b>	T. Nichols-3	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
<b>Life Safety</b>	1	Early warning system will allow residents to have increased awareness of flood events.
<b>Property Protection</b>	1	Will allow for more proactive measures to be taken to protect property
<b>Cost-Effectiveness</b>	1	
<b>Technical</b>	1	
<b>Political</b>	1	
<b>Legal</b>	1	Project area located within Town of Nichols
<b>Fiscal</b>	0	
<b>Environmental</b>	0	
<b>Social</b>	1	Will work to increase proactive emergency measures
<b>Administrative</b>	1	Flood system will be operating by community volunteers
<b>Multi-Hazard</b>	0	
<b>Timeline</b>	1	Project can be implemented within 6 months after receiving funding assistance
<b>Agency Champion</b>	0	
<b>Other Community Objectives</b>	0	
<b>Total</b>	9	
<b>Priority (High/Med/Low)</b>	High	



Town of Nichols Action Worksheet			
<b>Project Name:</b>	Sackett Creek Stream Bank Stabilization/Restoration		
<b>Project Number:</b>	T. Nichols-2		
Risk / Vulnerability			
<b>Hazard(s) of Concern:</b>	Flood, Severe Storm		
<b>Description of the Problem:</b>	Floodwaters caused Sackett Creek to create an entirely new channel into a field coming within 25 feet of the house on the property, depositing a large amount of sediment in the main channel threatening the bridge downstream. There is currently rip rap on both banks down to the bridge below this section and rip rap on the opposite bank of this reach. This causes the stream more erosive force on the bank in question and if not addressed now will continue to be a problem in the future for both the homeowner, and the three business (on both sides) and bridge downstream.		
Action or Project Intended for Implementation			
<b>Description of the Solution:</b>	Sackett Creek-Perform stream bank stabilization/restoration in accordance with NRCS standards and specifications. Floodwaters caused Sackett Creek to create an entirely new channel into a field coming within 25 feet of the house on the property, depositing a large amount of sediment in the main channel threatening the bridge downstream. To prevent this from occurring in the future the bank will be protected with rip-rap and two in stream structures will be installed to take pressure off the bank while allowing sediment to pass through the reach. Approximately 630 feet of bank protection is needed in this location. There is currently rip rap on both banks down to the bridge below this section and rip rap on the opposite bank of this reach. This causes the stream more erosive force on the bank in question and if not addressed now will continue to be a problem in the future for both the homeowner, and the three business (on both sides) and bridge downstream. The rock work will insure the stream does not continue to erode into a new channel.		
<b>Is this project related to a Critical Facility?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
<b>Is this project related to a Critical Facility located within the 100-year floodplain?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
<b>Level of Protection:</b>	100-year	<b>Estimated Benefits (losses avoided):</b>	Reduces or eliminates the erosion along the creek and reduces or eliminates damage to homes, businesses, and downstream bridge.
<b>Useful Life:</b>	20 years		
<b>Estimated Cost:</b>	\$150,000		
Plan for Implementation			
<b>Prioritization:</b>	High	<b>Desired Timeframe for Implementation:</b>	Within 6 months after receiving funds
<b>Estimated Time Required for Project Implementation:</b>	6-12 months	<b>Potential Funding Sources:</b>	FEMA HMGP or EWP
<b>Responsible Organization:</b>	Town Highway Department with support of TCSWCD and NRCS	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	Hazard Mitigation
Three Alternatives Considered (including No Action)			
<b>Alternatives:</b>	<b>Action</b>	<b>Estimated Cost</b>	<b>Evaluation</b>
	No Action	\$0	Problem continues
	Acquire properties in the area	\$500,000 +	Erosion will continue to occur, and Creek will continue to fill with sediment
	Replace existing rip rap and install where needed	\$40,000	Temporary solution; may not prevent erosion from continuing
Progress Report (for plan maintenance)			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			



Town of Nichols Action Worksheet		
<b>Project Name:</b>	Sackett Creek Stream Bank Stabilization/Restoration	
<b>Project Number:</b>	T. Nichols-2	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
<b>Life Safety</b>	1	Proposed mitigation can prevent future harm to residents in vicinity of floodplain
<b>Property Protection</b>	1	Will protect home in vicinity of floodplain, businesses, and bridge downstream
<b>Cost-Effectiveness</b>	1	Project will prevent repetitive maintenance of stream bank
<b>Technical</b>	1	Technical requirements of this project are feasible to implement
<b>Political</b>	0	
<b>Legal</b>	1	Project area within Town of Nichols
<b>Fiscal</b>	0	
<b>Environmental</b>	1	NRCS Standard will be used for stream bank stabilization
<b>Social</b>	1	Will reduce flood impacts on residents and businesses and prevent bridge damage.
<b>Administrative</b>	1	
<b>Multi-Hazard</b>	1	Flood, Severe Storm
<b>Timeline</b>	1	Project can be completed within 6 months of receiving funding
<b>Agency Champion</b>	0	
<b>Other Community Objectives</b>	0	
<b>Total</b>	10	
<b>Priority (High/Med/Low)</b>	High	

## 9.9 VILLAGE OF NICHOLS

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



### 9.9.1 Hazard Mitigation Plan Point of Contact

The following individuals have been identified as the Village of Nichols' hazard mitigation plan primary and alternate points of contact.

Primary Point of Contact	Alternate Point of Contact
Lesley Pelotte, Mayor Phone: 607-699-3947 Cell: 607-242-7886 Email: pelotte101@gmail.com	Sue Hall, Deputy Mayor Phone: 607-699-3165 Email:
Municipal Floodplain Administrator	
Lesley Pelotte, Mayor Phone: 607-699-3947 Cell: 607-242-7886 Email: pelotte101@gmail.com	



### 9.9.2 Municipal Profile

The Village of Nichols is located in the Town of Nichols in Tioga County, New York. The village is on the north border of the town and is in the Southern Tier of New York halfway between Binghamton and Elmira. According to the U.S. Census Bureau, the village has a total area of 0.5 square miles (1.3 km<sup>2</sup>). The Southern Tier Expressway (New York State Route 17 and future Interstate 86) and New York State Route 282 pass through the village.

The Village of Nichols is surrounded by water on three sides. To the north is the Susquehanna River; Wappasening Creek roughly parallels the village boundary to the east and is 564 feet from the boundary line at its most distant point; and Sackett Creek lies 1,611 feet to the west of the village. Roughly speaking, the farthest point from the Susquehanna River to the southern village boundary is 3,154 feet, or approximately 6/10 mile. These figures show that all areas of the village are within striking distance of water overflow, which could come from one or more of three directions at any given time. As such, leadership is developing an evacuation plan and communication tools that can be adapted to ever-changing disaster scenarios.

The Village of Nichols is governed by a Mayor and four Trustees. According to the 2010 Census, the community's population was 512.

### Growth/Development Trends

Table 9.9-1 summarizes major residential/commercial development that occurred between 2012 and July 2018 and any known or anticipated major residential/commercial development and major infrastructure development that has been identified in the next five years within the municipality. Refer to the map in 9.9.8 of this annex which illustrates the hazard areas along with the location of potential new development.

**Table 9.9-1. Growth and Development**

Property or Development Name	Type (e.g. Res., Comm.)	# of Units / Structures	Location (address and/or Parcel ID)	Known Hazard Zone(s)	Description/Status of Development
<b>Recent Development from 2012 to 2018</b>					
Tioga Golf Club	commercial	1	151 Roki Blvd. 159.18-2-2	None	Complete
<b>Known or Anticipated Development in the Next Five (5) Years</b>					
None anticipated at this time					

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

### 9.9.3 Natural Hazard Event History Specific to the Municipality

Tioga County has a history of natural hazard events as detailed in Volume I, Section 5.0 of this plan. A summary of historical events is provided in each of the hazard profiles and includes a chronology of events that have affected the County and its municipalities. The Village's history of federally-declared (as presented by FEMA) and significant hazard events (as presented in NOAA-NCEI) is consistent with that of Tioga County. Table 9.9-2 provides details regarding municipal-specific loss and damages that village experienced during hazard events. Information provided in the table below is based on reference material or local sources. For details of these and additional events, refer to Volume I, Section 5.0 of this plan.

**Table 9.9-2. Hazard Event History**

Dates of Event	Event Type (Disaster Declaration if applicable)	Tioga County Designated?	Summary of Damages/Losses
June 14, 2015	N/A	N/A	In some areas, homes, schools and other businesses were flooded.
March 14, 2017	DR-4322	Yes	A Nor'easter moved up the eastern US coast on March 13th to late on the 14th. Heavy snow spread across parts of central New York and Pennsylvania late on March 13th. By late evening on the 14th snowfall amounts range from 8 to 33 inches of snow. After the strong area of low pressure moved northeast, lake effect snow bands formed producing more snow across the area on March 15, 2017.
July 23, 2017	N/A	N/A	Rapid rises of area streams and creeks resulted in severe flash flooding for the Nichols, NY (\$9,000 in damages) and Vestal, NY areas. In the Village of Nichols, the driveway to Kirby Park and the Kirby Park pavilion and playground structure were damaged. Debris cleanup and removal was accomplished by volunteers.
August 2018	Severe Storms and Flooding (DR-4397)	Yes	Debris from the storm; no additional losses or damages. Cleanup and removal accomplished by volunteers.

Notes:

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

### 9.9.4 Hazard Vulnerabilities and Ranking

The hazard profiles in Section 5.0 of this plan have detailed information regarding each plan participant's vulnerability to the identified hazards. The following summarizes the hazard vulnerabilities and their ranking in the Village of Nichols. For additional vulnerability information relevant to this jurisdiction, refer to Section 5.0.

#### Natural Hazard Risk/Vulnerability Risk Ranking

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

As discussed in Section 5.3 (Hazard Ranking), each participating town or village may have differing degrees of risk exposure and vulnerability compared to Tioga County as a whole. Therefore, each municipality ranked the degree of risk to each hazard as it pertains to their community. The table below summarizes the hazard risk/vulnerability rankings of potential natural hazards for the Village of Nichols. The Village has reviewed the hazard risk/vulnerability risk ranking table and has made adjustments as necessary. During the review of the hazard/vulnerability risk, the Village indicated the following:

- While drought can occur during periods of lack of precipitation or warmer temperatures, it is not a huge concern for the Village. The Village felt that the 'medium' ranking is accurate for the community.



- The Village is protected by a levee and not as susceptible to flood as it has been in the past. Although the Village is not located in the 1% flood area, residents due experience losses due to basement flooding. The Village will continue to experience basement flooding due to water seeping through the ground. The Village felt that the ‘medium’ ranking is accurate for the community.
- The Village chose to change the overall ranking for severe storm events from high to medium. While the impacts from a severe storm can be damaging, the Village is prepared. They also have a designated shelter for residents to use during periods of power outages.
- The Village chose to change the overall ranking for severe winter storm from high to medium. The Village experiences winter storm events every year, of all severities, and does an excellent job at clearing roads and keeping residents safe. In addition, the Village has a designated shelter for residents to use during power outages.

**Table 9.9-3. Hazard Risk/Vulnerability Risk Ranking**

Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard <sup>a, b, c</sup>		Probability of Occurrence	Hazard Ranking
Drought	Damage estimate not available		Frequent	Medium
Flood	RCV Exposed to 1% Annual Chance Flood Event	\$18,515,000	Frequent	Medium
Severe Storm	100-year MRP	\$0	Frequent	Medium*
	500-year MRP	<\$1,000		
Severe Winter Weather	1% GBS	\$634,130	Frequent	Medium*
	5% GBS	\$3,170,650		

Notes:

- \* Municipality adjusted the hazard ranking
- a. Building damage ratio estimates based on FEMA 386-2 (August 2001)
- b. Loss estimates for the severe storm and severe winter storm hazards are structural values only and do not include the value of contents.
- c. Loss estimates for the flood hazard represents both structure and contents.

### National Flood Insurance Program (NFIP) Summary

The following table summarizes the NFIP statistics for the Village of Nichols.

**Table 9.9-4. NFIP Summary**

Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 100-year Boundary (3)
Nichols (V)	11	4	\$28,512.00	0	0	0

Source: FEMA 2018

1. Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA and are current as of February 28, 2018 and are summarized by Community Name. Please note the total number of repetitive loss properties excludes the severe repetitive loss properties. The number of claims represents claims closed by 2/28/2018. Total building and content losses from the claims file provided by FEMA Region 2.
2. Total building and content losses from the claims file provided by FEMA Region 2.

### Critical Facilities at Flood Risk

New York Department of Environmental Conservation (DEC) Statute 6 CRR-NY 502.4 sets forth floodplain management criteria for State projects located in flood hazard areas. The law states that no such projects related to critical facilities shall be undertaken in a Special Flood Hazard Area (SFHA) unless constructed according to

specific mitigation specifications, including being raised 2' above the Base Flood Elevation (BFE). This statute is outlined at <http://tinyurl.com/6-CRR-NY-502-4> While all vulnerabilities should be assessed and documented, the State places a high priority on exposure to flooding. Critical facilities located in an SFHA, or having ever sustained previous flooding, must be protected to the 500-year flood even, or worst damage scenario. For those that do not meet this criteria, the jurisdiction must identify an action to achieve this level of protection (NYS DHSES 2017).

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

**Table 9.9-5. Potential Flood Losses to Critical Facilities**

Name	Type	Exposure		Potential Loss from 1% Flood Event		Addressed by Proposed Action
		1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	
Village of Nichols Highway Garage	DPW		X	-	-	-
Nichols Fire Station – owned/operated by the Nichols Joint Fire District	EOC / Fire		X	-	-	V. Nichols-5
Nichols Town Hall – owned/operated by the Town of Nichols	Municipal		X	-	-	-
Nichols Village Water Pump – owned/operated by Suez Water	Potable Pump		X	-	-	-
Nichols Schoolhouse Apartments – owned by Tioga Opportunities	Senior		X	-	-	-
Verizon New York, Inc. – privately owned	Telecom		X	-	-	-
Well 1 – owned/operated by Suez Water	Well		X	-	-	-
Well 2 – owned/operated by Suez Water	Well	X		-	-	V. Nichols-6

Source: Tioga County GIS, FEMA 2012, and Hazus 4.2

## Identified Issues

The municipality has identified the following vulnerabilities within their community:

- Not getting anything in the village during flood events – working with NYS DHSES and County OEM (issue out NYS emergency handbook to all residents) and emphasize on the importance of emergency supplies – supply updated information to residents on emergency preparedness
- Lack of public outreach capabilities during power outages – purchase video message board to get the information out there. Encourage residents to use Hyper Reach & Reverse 911 (add a reminder in the newsletter)
- Basement flooding – elevated groundwater seeps through the basement, causing significant damage to basements. During large events, they receive significant amounts of water in basements. During periods of heavy rainfall, residents do experience water in their basements (about once every 3-4 years). A majority of homeowners have sump pumps but during power outages, they do not work. Work with homeowners to educate them on elevating mechanicals in their basements.



## 9.9.5 Capability Assessment

This section identifies the following capabilities of the local jurisdiction:

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

### Planning and Regulatory Capability

The table below summarizes the regulatory tools that are available to the Village of Nichols.

**Table 9.9-6. Planning and Regulatory Tools**

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
<b>Planning Capability</b>				
Comprehensive Plan	Yes	Local	Village Board	The Greater Nichols 2020 Plan (January 2006)
Capital Improvements Plan	No	-	-	-
Floodplain Management / Basin Plan	No	-	-	-
Stormwater Management Plan	No	-	-	-
Open Space Plan	No	-	-	-
Stream Corridor Management Plan	No	-	-	-
Watershed Management or Protection Plan	No	-	-	-
Economic Development Plan	Yes	County	Economic Development	Tioga County 2020 Strategic Plan
Comprehensive Emergency Management Plan	Yes	County	Emergency Management	Comprehensive Emergency Management Plan
Emergency Operation Plan	Yes	Local	Village Board	Emergency Operations Plan
Post-Disaster Recovery Plan	No	-	-	-
Transportation Plan	No	-	-	-
Strategic Recovery Planning Report	No	-	-	-
Other Plans:	-	-	-	-
<b>Regulatory Capability</b>				
Building Code	Yes	State & Local	Village Board	Building Code of NY State
Zoning Ordinance	No	-	-	-
Subdivision Ordinance	No	-	-	-

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
NFIP Flood Damage Prevention Ordinance	Yes	Federal, State, Local	Village Board	Local Law 2-2017
NFIP: Cumulative Substantial Damages	No	-	-	-
NFIP: Freeboard	Yes	State, Local	Village Board	State mandated BFE+2 for residential and non-residential construction
Growth Management Ordinances	No	-	-	-
Site Plan Review Requirements	Yes	Local	Planning Board	Local Law 1-2005
Stormwater Management Ordinance	No	-	-	-
Municipal Separate Storm Sewer System (MS4)	No	-	-	-
Natural Hazard Ordinance	No	-	-	-
Post-Disaster Recovery Ordinance	No	-	-	-
Real Estate Disclosure Requirement	Yes	State	-	NYS mandate, Property Condition Disclosure Act, NY Code - Article 14 §460-467
Other (Special Purpose Ordinances [i.e., sensitive areas, steep slope])	-	-	-	-

### Administrative and Technical Capability

The table below summarizes potential staff and personnel resources available to the Village of Nichols.

**Table 9.9-7. Administrative and Technical Capabilities**

Resources	Is this in place? (Yes or No)	Department/ Agency/Position
<b>Administrative Capability</b>		
Planning Board	Yes	Planning Board
Mitigation Planning Committee	Yes	Actively participate in the 5-year update of the County HMP and annual review
Environmental Board/Commission	No	-
Open Space Board/Committee	No	-
Economic Development Commission/Committee	No	-
Maintenance Programs to Reduce Risk	Yes	Maintenance
Mutual Aid Agreements	Yes	Neighboring communities – Towns of Nichols, Barton, and Tioga; local and county OEM; state and county DOT; fire departments
<b>Technical/Staffing Capability</b>		
Planner(s) or engineer(s) with knowledge of land development and land management practices	Yes	County
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	No	-

Resources	Is this in place? (Yes or No)	Department/ Agency/Position
Planners or engineers with an understanding of natural hazards	No	-
NFIP Floodplain Administrator (FPA)	Yes	Mayor
Surveyor(s)	No	-
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	Yes	County
Scientist familiar with natural hazards	No	-
Emergency Manager	Yes	Mayor
Grant writer(s)	No	-
Staff with expertise or training in benefit/cost analysis	No	-
Professionals trained in conducting damage assessments	No	-

### Fiscal Capability

The table below summarizes financial resources available to the Village of Nichols.

**Table 9.9-8. Fiscal Capabilities**

Financial Resources	Accessible or Eligible to Use (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	Yes
Capital improvements project funding	No
Authority to levy taxes for specific purposes	Yes
User fees for water, sewer, gas or electric service	No
Impact fees for homebuyers or developers of new development/homes	No
Stormwater utility fee	No
Incur debt through general obligation bonds	No
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	No

### Community Classifications

The table below summarizes classifications for community program available to the Village of Nichols.

**Table 9.9-9. Community Classifications**

Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	NP	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	NP	-	-

Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	9	Not available at the time of the update
NYSDEC Climate Smart Community	No	-	-
Storm Ready Certification	Yes	County	N/A
Firewise Communities classification	NP	-	-
Natural disaster/safety programs in/for schools	N/A	-	-
Organizations with mitigation focus (advocacy group, non-government)	Yes	Tioga County Hazard Mitigation Committee	-
Public education program/outreach (through website, social media)	Yes	Quarterly Newsletter	-
Public-private partnership initiatives addressing disaster-related issues	Yes	Village has a committee that is made up of village departments, residents, non-profits, and business owners – Emergency Preparedness Committee	-

Note:

N/A Not applicable  
 NP Not participating  
 - Unavailable

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

Criteria for classification credits are outlined in the following documents:

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

### Self-Assessment of Capability

The table below provides an approximate measure of the Village of Nichols' capability to work in a hazard-mitigation capacity and/or effectively implement hazard mitigation strategies to reduce hazard vulnerabilities.

**Table 9.9-10. Self-Assessment Capability for the Municipality**

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

### National Flood Insurance Program

#### NFIP Floodplain Administrator (FPA)

Lesley Pelotte, Mayor

#### Flood Vulnerability Summary

The municipality does not maintain lists/inventories of properties that have been flood damaged. The FPA noted that the Village of Nichols is surrounded by a certified/accredited levee that has not been overtopped or breached. As a result, substantial damage estimates have not been necessary and property owners have not had any interest in mitigation.

#### Resources

The FPA is the sole person responsible for floodplain administration. The FPA stated that NFIP administration services have been unnecessary due to the protection offered by the levee. The FPA stated that the Village provides education or outreach to the community regarding flood hazards/risk by informing residents that river levels need to be monitored should it rise to a level that may allow for overtopping of the levee. The FPA does not feel there are any barriers to running an effective floodplain management program. The FPA feels adequately supported and trained to fulfill their responsibilities as the municipal floodplain administrator but would welcome additional training. The FPA would consider attending continuing education and/or certification training on floodplain management if it were offered in the County for all local floodplain administrators.

#### Compliance History

The community in good-standing in the NFIP and has new floodplain maps as of February 26, 2018. The most recent CAV was conducted on April 23, 2010 and the most recent CAC was conducted on March 13, 2015.

#### Regulatory

The FPA stated that floodplain management regulations/ordinances meet the FEMA and State minimum requirements. Although the Village is protected by a levee and flood insurance is not required, the FPA was interested in finding out if the Community Rating System would be beneficial for those that do choose to purchase flood insurance and would be interested in attending a seminar on the program if it were offered locally.

### Integration of Hazard Mitigation into Existing and Future Planning Mechanisms

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day local government operations. As part of this planning effort, each community was surveyed to obtain a





better understanding of their community's progress in plan integration. A summary is provided below. In addition, the community identified specific integration activities that will be incorporated into municipal procedures.

### Planning

**Comprehensive Plan:** The Village of Nichols has a Comprehensive Plan which is currently being updated. The Plan does not include areas of natural hazard risk (e.g. flood-prone areas, steep slopes) but the update will refer to the Countywide Hazard Mitigation Plan.

**Hazard Mitigation Plan:** The Village of Nichols supports the implementation, monitoring, maintenance, and updating of the Tioga County HMP. Additionally, the Village assists with updating the County HMP and identifies areas of concern in the Village and discusses options to address the concerns.

### Regulatory and Enforcement (Ordinances)

**Flood Damage Prevention Ordinance:** The Village of Nichols's NFIP Flood Damage Protection Ordinance (Local Law 2-2017) meets the minimum Federal and State NFIP regulatory requirements.

The Village does have a specific ordinance (Local Law 1-2005) for site plan review and it is conducted by the Planning Board. The Village offers training to the Planning Board to guide their decisions with respect to natural hazard risk management.

### Operational and Administration

The NFIP Floodplain Management functions in the Village are carried out primarily by the FPA, Lesley L. Pelotte. The Village of Nichols does not have a municipal planner or contract a planning firm. There are no Boards or Committees that address management of natural hazard risk. The Village does not have staff or contract with firms that have experience with developing a Benefit-Cost Analysis, perform Substantial Damage Estimates, or have experience in preparing grant applications for mitigation projects. Staff do not receive training which supports natural hazard risk. No Village staff have job descriptions that specifically include identifying and/or implementing projects/actions or other efforts to reduce natural hazard risk. Staff do not participate in any associations, organizations, groups or other committees that support natural hazard risk reduction and build hazard management capabilities. The FPA indicated that the Village does not have other hazard management programs in place.

During and after a FEMA declaration, FEMA and NYS DHSES assist the Village with paperwork after disasters, assist with developing damage assessments, and will visit to the municipality to assist. Additionally, NYS DHSES offers classes to communities to help them with the process.

The Village performs debris removal from the bridge piers along Wappasening Creek. This is done after periods of heavy rain or after a storm event.

The Village Board composition changes with elections. With those changes, the appointed Village Board member works with Village employees to become familiar with the workings and maintenance of the levee. Additionally, the Village maintains a list of state and federal contacts regarding levees.

**Management Group:** The Village established a management group to address communication, notification, and coordination of resources. This allows residents in the Village to prepare for and evacuate in the event of a natural disaster. This helps protect life and property of Village residents.





**Emergency Preparedness:** Through New York Rising, the Village is installing a warning siren on the village hall for emergency notification. This will be used primarily for flooding and evacuations. Additionally, the Village is installing a LED message board that will alert Village residents of emergency messages. The Village has also created an Emergency Preparedness Committee that is made up of village departments, residents, non-profits, and business owners. They work together prior to, during and after major events.

**Mutual Aid Agreements:** The Village maintains mutual aid with neighboring communities with fire departments, local and County OEM, state and county DOT, Town of Nichols, Town of Barton and Town of Tioga.

### **Funding**

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The Village of Nichols' municipal/operating budget does not include line items for mitigation projects/activities or identify Capital Improvements within the budget. The Village has obtained funding for certification and accreditation of the Village levee through NY Rising. The Village also has several projects underway through NY Rising to mitigate damage to Kirby Park and stream bank stabilization for the Wappassening Creek; to install a generator at the former Nichols elementary School so it may be utilized as an emergency shelter; to install a warning siren to notify residents to evacuate or react to other emergencies; and a project for a LED message sign to inform residents of evacuation routes and information regarding health matters such as boil water advisories and public safety measures such as curfews. No local matches are required for these projects. There is also another NY Rising funded project to expand the Fire Department's ability to house critical equipment and make it more flood resilient. The Fire Department is also contributing to the expansion. The Fire Department is a separate entity within the Village. The Village does not have any other mechanisms to fiscally support hazard mitigation projects.

### **Education and Outreach**

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The Village has public outreach mechanisms/programs in place to inform citizens on natural hazards (e.g. safe use of generators, emergency preparedness, flood hazard information). All residences were given a NYS Emergency Information Handbook and a refrigerator magnet from the National Weather Service informing them of the flood stage on the Susquehanna River gauge in Owego and at what stage to start preparations. In order to further promote public outreach and education on natural hazard risk management, the FPA suggested the establishment of public meetings with expertise in subject matter related to natural risks.

### **Sheltering, Evacuation, and Temporary Housing**

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

Tioga County, through a buildable land analysis, has identified areas suitable for placing temporary and permanent housing. Refer to Section 4.7.5 in Section 4 (County Profile) of Volume 1 of this plan for a description of resources identified by the county to support municipalities with the identification of evacuation, sheltering, and temporary and permanent housing. Each year, during the annual HMP progress meeting, the municipality will discuss their progress in identifying shelters, evacuation routes, and temporary and permanent housing for their community.

### **Temporary Housing and Long-Term Housing**

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The Village of Nichols noted that they are not in a floodplain and have no open property. Therefore, the Village did not identify potential sites in the municipality for the placement of temporary housing for residents displaced



by a disaster or potential sites within the municipality suitable for relocating houses of the floodplain and/or building new homes once properties in the floodplain are acquired.

### **Evacuation and Sheltering Needs**

The Nichols Fire Department (Volunteer) is ALS certified and would respond to any medical emergency. The Village of Nichols utilizes the former Nichols Elementary School on Roki Boulevard, located in the Town of Nichols, as an emergency shelter. The former school accommodates pets and is ADA compliant. The Town of Nichols is in the process of establishing backup power. The facility provides EMS medical services and food. At this time, the facility is not equipped with showering facilities. The Town of Nichols is with the American Red Cross and the local fire department to ensure that the former school is compliant with the NYS Uniform Fire Prevention and Building Code and to establish the former school as an American Red Cross shelter. Procedures for evacuation routes are provided by Tioga County.

## **9.9.6 Mitigation Strategy and Prioritization**

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

### **Past Mitigation Initiative Status**

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

**Table 9.9-11. Status of Previous Mitigation Actions**

Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, or No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.	
						Cost	No Cost to Village		
1	To address concerns regarding the mouth of Wappasening gravel deposition educate officials on stream geomorphology and maintenance.	Flood	Officials and residents did not understand the makeup of the Creek and the issues associated with it	Village Administration with support of SWCD, DEC and ACOE	Complete	Level of Protection	100-year flood	1.	Discontinue.
						Damages Avoided; Evidence of Success	Reduced or eliminated the risk of the creek overflowing its banks in the Village	2.	-
								3.	Through the levee accreditation, the Village officials have been made aware of the effect of gravel disposition in the stream. During the accreditation process, it was decided that no work would be done on the mouth of the Wappasening Creek.
2	To address concerns with water system and flooding impacts to system, study further concerns and impacts during events.	Flood	One of the two wells located in the Village is in the floodplain but not impacted by flooding. There have been issues with the one not in the floodplain during a power outage. Suez Water has developed an emergency plan to install a generator during a power outage.	Village Administration with support of SWCD and Suez Water	Complete	Cost	No cost to Village	1.	Discontinue
						Level of Protection	100-year event	2.	-
						Damages Avoided; Evidence of Success	The well will function in the event of a power outage and provide water to Village	3.	The project has been completed. Suez Water has developed an emergency plan for the well located outside of the floodplain that is vulnerable to power outages. Suez Water has an emergency generator to power the well in the event of a power outage. The well that is in the floodplain is not impacted by flooding or power outages. Therefore, this project will not be included in the 2018 HMP Update.
3	To increase capacity, contain and direct stormwater runoff on Roki Blvd. To alleviate damage to driveways and possible undermining of roadway.	Flood	Areas along Roki Boulevard tend to flood during periods of heavy rain.	Village Board Support Agencies: Town of Nichols Highway Dept., Suez Water and Town of Nichols	Complete	Cost	\$11,193.35	1.	Discontinue
						Level of Protection	25-year event	2.	-
						Damages Avoided; Evidence of Success	Areas no longer flood during heavy rain	3.	Work has been completed – an engineering study was performed and the driveway and ditch work to alleviate the problem was completed.



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, or No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.	
4	Village Board to appoint a Village Board member to work with Village employee to become familiar with the workings and maintenance of levee. And to maintain contact list of State and Federal contacts regarding levee. This will ensure proper maintenance and help prevent levee failure and protect the life and property of Village residents.								
	See above	Flood		Village Board Support Agencies: NYS DEC, FEMA and Army Corps of Engineers	Ongoing Capability	Cost	-	1.	Discontinue
						Level of Protection	-	2.	-
						Damages Avoided; Evidence of Success	-	3.	This is an ongoing capability for the Village. The Village Board composition changes with elections. With those changes, the appointed Village Board member works with Village employees to become familiar with the workings and maintenance of the levee. Additionally, the Village maintains a list of state and federal contacts regarding levees.
5	Designate the Village of Nichols Elementary School as an emergency shelter, secure the necessary essentials to maintain the shelter. Repair /replace and provide a fuel source for generator. This will allow the residents of the Village, Town and stranded travelers to evacuate to a safe maintained facility. This may prevent possible loss of life and create a shelter for flooding and severe winter storms								
	See above	All hazards	The Village does not have a designated shelter with backup power.	Village Board Support Agencies: FEMA, Red Cross, Town of Nichols and CCNN	In Progress	Cost	-	1.	Include in the 2018 HMP
						Level of Protection	-	2.	The former elementary school has been designated as an emergency shelter for the Village. The Village is currently working on purchasing and installing a generator and fuel source, which have been purchased with NY Rising funding. The generator will be installed by mid-2019.
						Damages Avoided; Evidence of Success	Provide a safe environment in the event of an emergency or evacuation	3.	-
6	Create a management group to address communication, notification and coordination of resources. This will allow the residents of the Village and Town to prepare / evacuate in the event of an event or natural disaster. This will help protect life and property of village and Town residents. This will work in combination with the early warning system.								
	See above	All hazards		Mitigation Group with support of the Village, Town, County and Fire Department	Ongoing Capability	Cost	-	1.	Discontinue.
						Level of Protection	-	2.	-
						Damages Avoided; Evidence of Success	-	3.	This is an ongoing capability for the Village. The management group has been established.



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, or No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.	
7	Retrofit structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority. Phase 1: Identify appropriate candidates for retrofitting based on cost-effectiveness versus relocation. Phase 2: Where retrofitting is determined to be a viable option, work with property owners toward implementation of that action based on available funding from FEMA and local match availability.								
	See above	Flood, Severe Storm, Earthquake		Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	Complete	Cost	No cost to Village – homeowner expenses	1.	Discontinue
						Level of Protection	100-year	2.	-
						Damages Avoided; Evidence of Success	Reduced or eliminated damages from groundwater flooding and other flood events	3.	The entire Village is protected by the levee; therefore, the Village does not work with identifying and/or retrofitting structures. Several homeowners who have been impacted by groundwater flooding elevated their utilities aboveground to prevent damage during groundwater flooding events. This was done through personal finances.  The Village did elevate the electric system of Kirby Park to the 100-year flood level to protect the system from damage during flood events.  This project will not be included in the 2018 HMP Update.
8	Conduct and facilitate community and public education and outreach for residents and businesses to include, but not be limited to, the following to promote and effect natural hazard risk reduction: <ul style="list-style-type: none"><li>• Provide and maintain links to the HMP website, and regularly post notices on the County/municipal homepage(s) referencing the HMP webpages.</li><li>• Prepare and distribute informational letters to flood vulnerable property owners and neighborhood associations, explaining the availability of mitigation grant funding to mitigate their properties, and instructing them on how they can learn more and implement mitigation.</li><li>• Use email notification systems and newsletters to better educate the public on flood insurance, the availability of mitigation grant funding, and personal natural hazard risk reduction measures.</li><li>• Work with neighborhood associations, civic and business groups to disseminate information on flood insurance and the availability of mitigation grant funding.</li></ul>								
	See above	All hazards	Lack of community and public outreach for residents and businesses	Municipality with support from Planning Partners, NYSOEM, FEMA	Ongoing Capability	Cost	-	1.	Discontinue
						Level of Protection	-	2.	-
						Damages Avoided; Evidence of Success	-	3.	This is an ongoing capability; therefore, it will not be an included action in the 2018 HMP Update. The Village of Nichols distributes a quarterly newsletter that provides hazard and emergency information for residents. The



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, or No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
								Village has also provided 'know your river flood stages' magnets to residents. The Village has made available state and county informational handouts as well. The Village is currently working on a municipal website and the Floodplain Administrator will post educational and outreach posts, in addition to flood warnings when the site is ready.
9	See above	Flood, Severe Storms	The flood risk standards may not be adequate for the Village	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	No Progress	Begin the process to adopt higher regulatory standards to manage flood risk (i.e. increased freeboard, cumulative substantial damage/improvements).		
						Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. The current standards are sufficient for the Village; therefore, this action will not be included in the 2018 HMP Update.
10	See above	Flood, Severe Storms	The Village FPA is not a Certified Floodplain Manager	Village Floodplain Administrator	No Progress	Have designated NFIP Floodplain Administrator (FPA) become a Certified Floodplain Manager through the ASFPM, and pursue relevant continuing education training such as FEMA Benefit-Cost Analysis.		
						Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. At the time of this plan update, this action is not relevant to the Village. However, the FPA and Code Official will pursue relevant educational trainings when made available.
11	Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Section 7.0	All hazards	Ongoing capability	Municipality (via mitigation planning point of contacts) with support from Planning Partners (through their Points of Contact), NYSOEM	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. The Village continues to support the implementation, monitoring, maintenance, and updating of the Tioga County HMP. This is an ongoing capability for the Village; therefore, it will not be an identified action in the 2018 HMP update.
12	Complete the ongoing updates of the Comprehensive	All Hazards	Ongoing capability	Municipality with support	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, or No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.	
	Emergency Management Plans			from NYSOEM		Damages Avoided; Evidence of Success	-	3.	This is an ongoing capability for the Village; therefore, it will not be an identified action in the 2018 HMP update. The Village updates the Comprehensive Emergency Management Plan as needed.
13	Create/enhance/maintain mutual aid agreements with neighboring communities for continuity of operations.	All Hazards	Ongoing capability	Municipality with support from Surrounding municipalities and County	Ongoing Capability	Cost	-	1.	Discontinue
						Level of Protection	-	2.	-
						Damages Avoided; Evidence of Success	-	3.	This is an ongoing capability for the Village; therefore, it will not be an identified action in the 2018 HMP update. The Village maintains mutual aid with neighboring communities with fire departments, local and County OEM, state and county DOT, Town of Nichols, Town of Barton and Town of Tioga.
14	See above	All Hazards	Ongoing capability	Municipality with support from County, NYSOEM, FEMA	Ongoing Capability	Identify and develop agreements with entities that can provide support with FEMA/SOEM paperwork after disasters; qualified damage assessment personnel – Improve post-disaster capabilities – damage assessment; FEMA/SOEM paperwork compilation, submissions, record-keeping			
						Cost	-	1.	Discontinue
						Level of Protection	-	2.	-
15	See above	All Hazards	Ongoing capability	Municipality with support from County, NYSOEM, FEMA	Ongoing Capability	Damages Avoided; Evidence of Success	-	3.	This is an ongoing capability for the Village; therefore, it will not be an identified action in the 2018 HMP update. FEMA and NYS DHSES assist the Village with paperwork after disasters and will come to the municipality to help. Additionally, NYS DHSES offers classes to communities to help them with the process.
						Cost	-	1.	Discontinue
						Level of Protection	-	2.	-



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, or No Progress, Complete)	Evaluation of Success (if project status is complete)	Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.		
16	Participate in local, county and/or state level projects and programs to develop improved structure and facility inventories and hazard datasets to support enhanced risk assessment efforts. Such programs may include developing a detailed inventory of critical facilities based upon FEMA’s Comprehensive Data Management System (CDMS) which could be used for various planning and emergency management purposes including: <ul style="list-style-type: none"><li>Support the performance of enhanced risk and vulnerability assessments for hazards of concern.</li><li>Support state, county and local planning efforts including mitigation (including updates to the State HMP), comprehensive emergency management, debris management, and land use.</li><li>Improved structural and facility inventories could incorporate flood, wind and seismic-specific parameters (e.g. first floor elevations, roof types, structure types based on FEMA-154 “Rapid Visual Screening of Buildings for Potential Seismic Hazards” methodologies). It is recognized that these programs will need to be initiated and supported at the County and/or State level, and will require training, tools and funding provided at the county, state and/or federal level.</li></ul>								
	See above	All hazards	Ongoing capability	HMP Coordinator	Ongoing Capability	Cost	-	1.	Discontinue
						Level of Protection	-	2.	-
						Damages Avoided; Evidence of Success	-	3.	This is an ongoing capability for the Village; therefore, it will not be an identified action in the 2018 HMP update. The Village works with local, county and state. The Village is assisting with updating the county HMP and is constantly identifying areas of concern and identifying options to address those concerns.
17	To stabilize creek banks, remove gravel in stream bead and remove debris from bridge piers. This will allow the creek to hold storm water and not allow storm water to migrate into Kirby park. To alleviate silt, build up at base of levee. This will help prevent losses of Kirby Park equipment and utilities and keep the levee in proper working order and maintain the proper freeboard.								
	See above	Flood		Village Administration, County Highway Department, NYS DEC, NYS DOT, and Army Corps of Engineers	In Progress	Cost	-	1.	Include in the 2018 HMP
						Level of Protection	-	2.	Silt removal, hydroseeding, and rip rap have been installed to the bank of Wappasening Creek. Additional work is still needed. This work will be completed with assistance from NYS DOT and USACE. Project is funded through NY Rising. The project will be completed by December 31, 2018.
						Damages Avoided; Evidence of Success	-	3.	-



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**Completed Mitigation Initiatives Not Identified in the Previous Mitigation Strategy**

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

- Through a grant from New York Rising, the Village is installing a warning siren on the village hall for emergency notification. This will be used primarily for flooding and evacuations. Additionally, the Village is installing a LED message board that will alert Village residents of emergency messages. This project should be completed by the end of September 2018.

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**Proposed Hazard Mitigation Initiatives for the Plan Update**

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The Village of Nichols participated in a mitigation action workshop on July 11, 2018 and was provided the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 ‘Selecting Appropriate Mitigation Measures for Floodprone Structures’ (March 2007) and FEMA ‘Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards’ (January 2013).

Table 9.9-12 summarizes the comprehensive-range of specific mitigation initiatives the Village of Nichols would like to pursue in the future to reduce the effects of hazards. Some of these initiatives may be previous actions carried forward for this plan update. These initiatives are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. Both the four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

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

Table 9.9-13 provides a summary of the prioritization of all proposed mitigation initiatives for the Plan update.



Table 9.9-12. Proposed Hazard Mitigation Initiatives

Project Number	Project Name	Description of Problem	Description of Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Potential Funding Sources	Estimated Timeline	Priority	Mitigation Category
V. Nichols-1	Municipal website	The Village currently does not have a municipal website. This limits the public outreach the village can do.	Once developed, the FPA will post hazard-related educational and outreach information, along with flood warnings.	All	All	No	No	Village Board and Floodplain Administrator	All residents will benefit as they will be informed and stay safe	<\$10,000	Village Budget	Less than two years	Medium	EAP
V. Nichols-2	Implement flood disaster communications	See Action Worksheet	See Action Worksheet	Flood and Severe Storm	All	No	No	Village Board	Better community awareness about the flood hazard, how to prepare for it, and how to evacuate.	\$50,000	NY Rising, FEMA PDM and HMGP	One Year	High	EAP
V. Nichols-3 (old)	Community Shelter generator	During Tropical Storm Lee in 2011, the elementary school served as a shelter; however, it was not equipped with backup power. The facility lost power.	The former elementary school has been designated as an emergency shelter for the Village. The Village is currently working on purchasing and installing a generator and fuel source, which have been purchased with NY Rising funding.	All hazards	All	Yes	No	Village Board Support Agencies: FEMA, Red Cross, Town of Nichols and CCNN	Ensure continuous operation of the Village's satellite EOC, allow the school to function as a shelter	\$70,000	NY Rising Grant	One Year	High	SIP



Table 9.9-12. Proposed Hazard Mitigation Initiatives

Project Number	Project Name	Description of Problem	Description of Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Potential Funding Sources	Estimated Timeline	Priority	Mitigation Category
V. Nichols-4 (old)	Recreation Improvements and Creek Stabilization	During Tropical Storm Lee, the Wappasening Creek rose over its banks, flooding 90% of the Park. The force of the water was so great that it washed away goal posts and caused structural damage to both the bandstand and pavilion and left the grounds of the park covered in mud and debris.	Silt removal, hydroseeding, and rip rap have been installed to the bank of Wappasening Creek. Additional work is still needed. This work will be completed with assistance from NYS DOT and USACE. Project is funded through NY Rising.	Flood, Severe Storm	All	No	No	Village Administration, County Highway Department, NYS DEC, NYS DOT, and Army Corps of Engineers	Reduce flood impacts to park, improve quality of life for residents, reduce bank erosion and sediment in creek	\$1 million	NY Rising Grant	Two years	High	SIP
V. Nichols-5	Improving the resiliency of the fire station	See Action Worksheet	See Action Worksheet	Flood	All	Yes	No	Joint Fire District	Better service to the community. Improved safety to volunteer firefighters and residents.	\$3.5 million	Joint Fire District, NY Rising Allocation (\$1.155 m)	2 Years	High	SIP
V. Nichols-6	Critical Facility – Well	There is a well located in the 1% annual chance flood	The village will inform the owner / operator (Suez Water)	Flood	1, 6	Yes	No	Within 1 year	Village Floodplain Administrator	Village Staff Time	Provide outreach to the property owner and	Municipal Budget	Medium	SIP, EAP



Table 9.9-12. Proposed Hazard Mitigation Initiatives

Project Number	Project Name	Description of Problem	Description of Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Potential Funding Sources	Estimated Timeline	Priority	Mitigation Category
		area in the Village. It is unknown as to whether or not the well is mitigated to a 500-year event. The Village does not own or operate the well and does not have jurisdiction over it.	that their well is located in the floodplain and needs to be protected against a 500-year event. The village will provide mitigation options to the property owner.								informing them of potential flood damage and possible solutions			

Notes:

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

Acronyms and Abbreviations:

CAV	Community Assistance Visit
CRS	Community Rating System
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
FPA	Floodplain Administrator
HMA	Hazard Mitigation Assistance
N/A	Not applicable
NFIP	National Flood Insurance Program
OEM	Office of Emergency Management

Potential FEMA HMA Funding Sources:

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

Timeline:

The time required to complete the project

Cost:

Estimated costs associated with implementation

Benefits:

The benefits that implementation of this project will provide.

Mitigation Category:

- Local Plans and Regulations (LPR) – These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.
- Structure and Infrastructure Project (SIP) - These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.
- Natural Systems Protection (NSP) – These are actions that minimize damage and losses, and also preserve or restore the functions of natural systems.



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

**Critical Facility:**

- Yes 💧 - Critical Facility located in 1% floodplain



Table 9.9-13. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
V. Nichols-1	Municipal website	1	-1	1	1	1	1	1	0	1	0	1	0	1	0	8	Medium
V. Nichols-2	Implement flood disaster communications	1	1	1	1	0	1	1	0	1	1	1	1	1	0	11	High
V. Nichols- 3 (old)	Community Shelter generator	1	1	1	1	0	0	0	0	1	1	1	1	1	0	9	High
V. Nichols-4 (old)	Recreation Improvements and Creek Stabilization	1	1	1	1	1	1	0	1	1	1	1	1	0	1	12	High
V. Nichols-5	Improving the resiliency of the fire station	1	1	1	1	1	1	1	0	1	1	1	1	1	0	12	High
V. Nichols-6	Critical Facility – Well	0	1	1	1	0	0	1	1	1	0	0	0	1	1	8	Medium

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



### **9.9.7 Future Needs To Better Understand Risk/Vulnerability**

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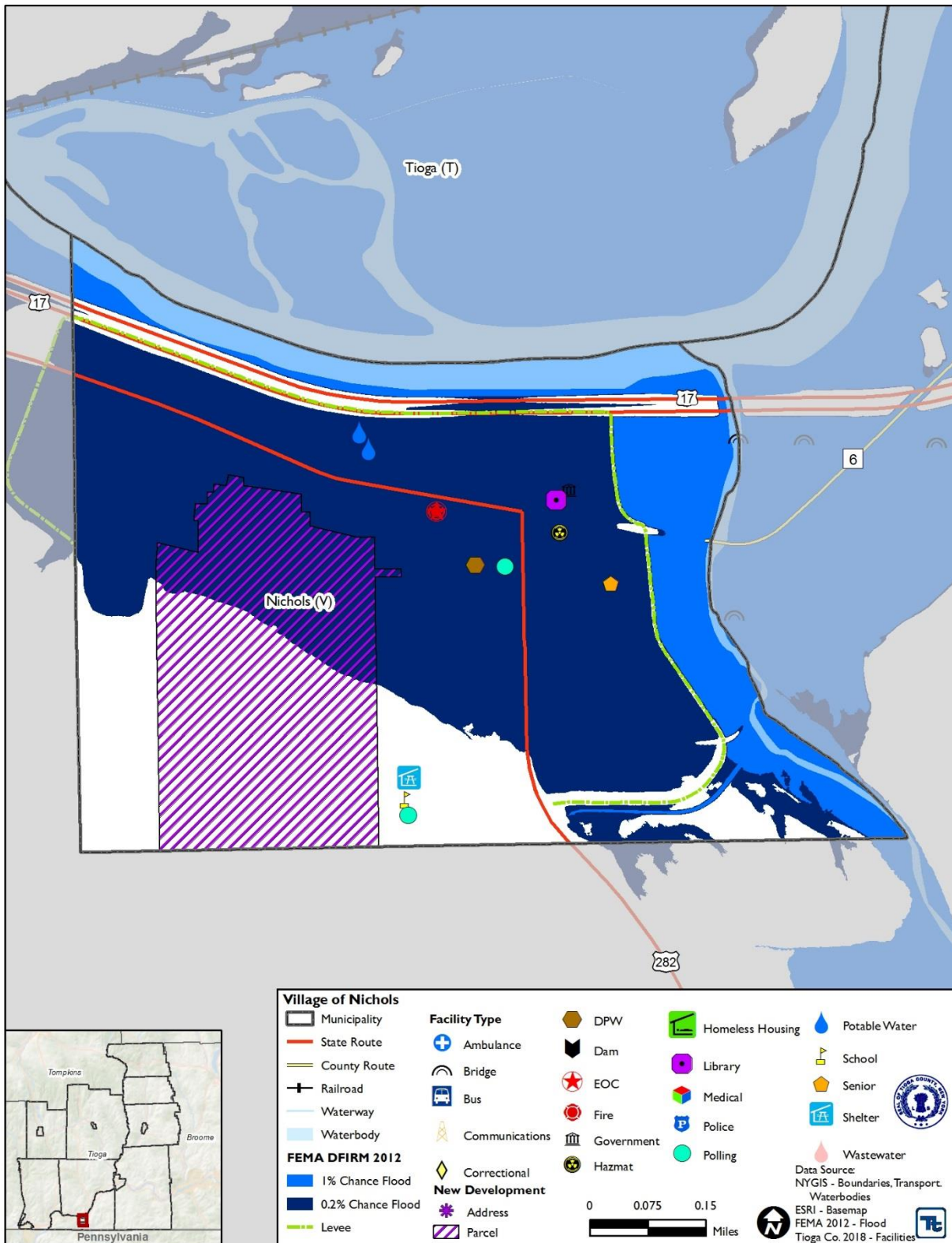
None at this time.

### **9.9.8 Hazard Area Extent and Location**

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Figure 9.9-1 illustrates the hazard area extent and location for the Village of Nichols and shows the probable areas impacted within the municipality. This map is based on best available data at the time of the preparation of this plan and is considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the Village of Nichols has significant exposure. A map of the Village of Nichols hazard area extent and location is provided on the following page. This map indicates the location of the regulatory floodplain as well as identified critical facilities within the municipality.

Figure 9.9-1. Village of Nichols Hazard Area Extent and Location



Note: The Village EOC includes the fire department and EMS services





Village of Nichols Action Worksheet			
<b>Project Name:</b>		Implement flood disaster communications	
<b>Project Number:</b>		V. Nichols-2	
Risk / Vulnerability			
<b>Hazard(s) of Concern:</b>		Flood, Severe Storm	
<b>Description of the Problem:</b>		<p>The entire village sits in a Special Flood Hazard Area. The farthest distance between a water body and a village boundary is 6/10 mile, the distance between the Susquehanna River and the town's southern border. Water can strike residents from nearly all sides and evacuation routes will vary based on the direction of flood overflow. Because disaster can strike from any side, village officials need print, electronic, and signage communications tools to quickly and flexibly articulate the danger at hand and how citizens should react to a given scenario. See flood damage in map and photos below.</p> <p>During the flooding in 2011, the Village of Nichols was a virtual island. Disaster relief supplies had to be delivered to the village via helicopter. The approaches to the village from the east and south were cut off because the bridges that cross the Wappasening Creek were washed away. The roads to the west were impassable because inundation of flood waters from the Susquehanna river. The path to the north was cut off because of the closing of the bridge that crosses the Susquehanna River for safety reasons and Route 17C was closed in many areas because of flood waters. Travelers on Rt17 /186 were detoured into the village and were verbally directed to our emergency shelter. The flood waters approached 18" of overtopping our levee on the Eastern side of the village which prompted the village to evacuate to our emergency shelter. While residents are familiar with the shelter location visitors and travelers needed to be directed to the location.</p>	
Action or Project Intended for Implementation			
<b>Description of the Solution:</b>		<p>The Village would like to develop professional materials that communicate flood risk and clearly explain the routes households and businesses should use to evacuate in one or more scenarios. There is a marker on the Wappasening Creek at the east end of the village and a gauge in Kirby Park to monitor the water level near the confluence of the creek and the Susquehanna River, but these are not the only directions from which water can affect residents. The village is conducting talks with the Tioga County Office of Emergency Management to identify evacuation routes based on different scenarios because in 2011 the flooding was so widespread that it was nearly impossible to designate specific routes out of the village. In addition to developing print media to disseminate information for planning purposes and electronic media for immediate announcements, the village would like to purchase portable signs identifying evacuation routes as part of its Emergency Preparedness and Public Awareness Projects. The Village will also purchase and install permanent electronic message boards which will be used to notify residents of emergency alerts, warnings, and other important information. The Village will be installing a warning siren, as well, to aid in another emergency alert system for residents.</p>	
<b>Is this project related to a Critical Facility?</b>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
<b>Is this project related to a Critical Facility located within the 100-year floodplain?</b>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
<b>Level of Protection:</b>	500-year	<b>Estimated Benefits (losses avoided):</b>	Better community awareness about the flood hazard, how to prepare for it, and how to evacuate.
<b>Useful Life:</b>	50 years		
<b>Estimated Cost:</b>	\$50,000		
Plan for Implementation			
<b>Prioritization:</b>	High	<b>Desired Timeframe for Implementation:</b>	6 months
<b>Estimated Time Required for Project Implementation:</b>	1 year	<b>Potential Funding Sources:</b>	NY Rising, FEMA HMGP and PDM grant
<b>Responsible Organization:</b>	Village Board, Mayor's Office	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	Hazard Mitigation, Village Emergency Response Plan
Three Alternatives Considered (including No Action)			
<b>Alternatives:</b>	<b>Action</b>	<b>Estimated Cost</b>	<b>Evaluation</b>
	No Action	\$0	Develop messages on the fly instead of a clear communications package outlined in advance of a disaster
	Recruit a local public relations firm to volunteer its services to manage communications	\$0	During emergency situations, such companies are overwhelmed with the responsibility of supporting paying clients.
	Continue using resources developed by the State/NWS	\$0	Not village-specific. Less than complete messages disseminated.
Progress Report (for plan maintenance)			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			



Village of Nichols Action Worksheet		
<b>Project Name:</b>	Implement flood disaster communications	
<b>Project Number:</b>	V. Nichols-2	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
<b>Life Safety</b>	1	Protect the life and safety of residents
<b>Property Protection</b>	1	Protect property from flood
<b>Cost-Effectiveness</b>	1	
<b>Technical</b>	1	
<b>Political</b>	0	
<b>Legal</b>	1	The Village has authority to conduct project
<b>Fiscal</b>	1	Funding through NY Rising and other grants
<b>Environmental</b>	0	
<b>Social</b>	1	
<b>Administrative</b>	1	
<b>Multi-Hazard</b>	1	Flood, Severe Storm
<b>Timeline</b>	1	Less than one year
<b>Agency Champion</b>	1	
<b>Other Community Objectives</b>	0	
<b>Total</b>	11	
<b>Priority (High/Med/Low)</b>	High	



Village of Nichols Action Worksheet			
<b>Project Name:</b>	Improving the resiliency of the fire station		
<b>Project Number:</b>	V. Nichols-5		
Risk / Vulnerability			
<b>Hazard(s) of Concern:</b>	Flooding		
<b>Description of the Problem:</b>	<p>The village fire station on West River Road serves both the village and the town. It has come close to being inundated. In 2011, during Hurricane Irene, the water approached the structure, which is situated two blocks from the confluence of the Susquehanna River and the Wappasening Creek. The station will house critical rescue equipment: a rescue boat, ambulances, fire trucks, and other assets. The project also includes adding a wing for fire response and recovery services. It is called the Joint Fire District because it serves both the Town and Village of Nichols. The land around the village is hilly, so water flows down toward the river and has flooded the area near the station from on high, in addition to overflow there may be from nearby water bodies. The fire station is in the path of this flowing water. The building also serves as a backup emergency shelter and EOC. In 2011, residents were not able to evacuate using Highway 282, the bridge over the Wappasening Creek was closed, and the bridge over the Susquehanna River was closed. Residents and visitors to the community were trapped in what is essentially a flat plain that flows out from the Susquehanna River and sought shelter at the station. See next pages for a map showing the location of the building and articles highlighting the station's importance to the community.</p>		
Action or Project Intended for Implementation			
<b>Description of the Solution:</b>	<p>Current designing project to remediate the current fire house and expand capacity with a new addition. The ultimate goal is to make the structure more flood resilient by elevating the utilities and installing flood-resistant doors. The retrofit of the building will protect to the 500-year flood level and alleviate groundwater flooding. DASNY is currently reviewing the building specifications.</p>		
<b>Is this project related to a Critical Facility?</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
<b>Is this project related to a Critical Facility located within the 100-year floodplain?</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
<b>Level of Protection:</b>	500-year	<b>Estimated Benefits (losses avoided):</b>	Better service to the community. Improved safety to volunteer firefighters and residents.
<b>Useful Life:</b>	50 years		
<b>Estimated Cost:</b>	\$3.5 million		
Plan for Implementation			
<b>Prioritization:</b>	High	<b>Desired Timeframe for Implementation:</b>	24 months
<b>Estimated Time Required for Project Implementation:</b>	9 months	<b>Potential Funding Sources:</b>	Joint Fire District, NY Rising Allocation (\$1.155 m)
<b>Responsible Organization:</b>	Joint Fire District	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	Joint Fire District Operations Plan and local Emergency Response Plan
Three Alternatives Considered (including No Action)			
<b>Alternatives:</b>	<b>Action</b>	<b>Estimated Cost</b>	<b>Evaluation</b>
	No Action	\$0	Station is still at risk for flooding
	Move the fire station	\$5 million	Would not be close to historic structures that need to be protected.
	Elevate the station	\$10 million	Can't accommodate fire trucks in this manner
Progress Report (for plan maintenance)			
<b>Date of Status Report:</b>	7/11/2018		
<b>Report of Progress:</b>	Plans under review by DASNY		
<b>Update Evaluation of the Problem and/or Solution:</b>			



Village of Nichols Action Worksheet		
<b>Project Name:</b>	Improving the resiliency of the fire station	
<b>Project Number:</b>	V. Nichols-5	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
<b>Life Safety</b>	1	Continuity of fire operations can promote life safety during emergencies.
<b>Property Protection</b>	1	Proposed project will protect emergency services
<b>Cost-Effectiveness</b>	1	Project cost will not equal total of lost equipment/assets within fire stations or historical structures which may be damaged in the event of an emergency
<b>Technical</b>	1	Technical requirements of this plan are feasible to implement.
<b>Political</b>	1	Support from citizens present. Vote took place to approve bond for fire station.
<b>Legal</b>	1	The Village has authority to conduct project
<b>Fiscal</b>	1	Funding through Joint Fire District NY Rising
<b>Environmental</b>	0	
<b>Social</b>	1	
<b>Administrative</b>	1	
<b>Multi-Hazard</b>	1	All hazards
<b>Timeline</b>	1	Completed within two years
<b>Agency Champion</b>	1	
<b>Other Community Objectives</b>	0	
<b>Total</b>	12	
<b>Priority (High/Med/Low)</b>	High	



Tioga County Jurisdictional Annex Review Sign-Off Sheet  
Signatures indicate review of annex content by the municipal official



Village of Nichols, N.Y.

MUNICIPALITY NAME

**Mayor/Administrator/Supervisor**

LESLEY PELOTTE

Name

Signature

Lesley Pelotte

Date

11/2/2018

**Fiscal/CFO** TREASURER

Sheila Middleton

Name

Signature

Sheila Middleton

Date

11/5/2018

**Building Code Official**

Marlin Jerzak CEO

Name / Title

Signature

Marlin Jerzak

Date

11/8/18

**Floodplain Administrator**

Lesley Pelotte, Mayor

Name / Title

Signature

Lesley Pelotte

Date

11/2/2018

**Emergency Manager**

Lesley Pelotte

Name / Title

Signature

Lesley Pelotte

Date

11/2/2018

**Land Use Planner**

Name / Title

Signature

Date

**Public Works Director**

Name / Title

Signature

Date

**Highway Superintendent**

Name / Title

Signature

Date

**Police Department**

Name / Title

Signature

Date

**Fire Department**

Name / Title

Signature

Date

## 9.10 TOWN OF OWEGO

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



2010 Population: 15,987  
Population in 100 year Floodplain (SFHA): 720

Land Area: 65,863 acres  
Land Area in Floodplain: 6.1%  
NFIP policies: 196  
NFIP Policies in SFHA: 121  
NFIP Claims: 433  
Total NFIP Losses: \$23.4 million



Number of Buildings: 6675  
Total Replacement Building Value: \$2,832million  
Number of Buildings in the SFHA: 425  
Total Replacement Building Value Exposed in the SFHA: \$341 million

Mitigation Focus  
Flood



### 9.10.1 Hazard Mitigation Plan Point of Contact

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

Primary Point of Contact	Alternate Point of Contact
Debra Standing, Planning & Zoning Administrator Phone: 607-687-0123 x6 Email: <a href="mailto:dstandingertownofowego.com">dstandingertownofowego.com</a>	Dean Morgan, Town Board Phone: 607-687-0123 ext.333 Email: <a href="mailto:dmorgan@townofowegony.com">dmorgan@townofowegony.com</a>

## 9.10.2 Municipal Profile

The Town of Owego is located in Tioga County, New York. The town is in the southeast corner of the county and the Village of Owego in the western part of the town. Both town and village are west of Binghamton, New York. According to the U.S. Census Bureau, the town has a total area of 105.8 square miles (273.9 km<sup>2</sup>), of which, 104.2 square miles (269.8 km<sup>2</sup>) of it is land and 1.6 square miles (4.1 km<sup>2</sup>) of it (1.51%) is water. The Susquehanna River flows across the town, dividing it into two parts. Owego Creek flows into the Susquehanna at Owego village and marks the west town line. The east town line is the border of Broome County, New York and the south town line is the border of Pennsylvania (Bradford and Susquehanna counties).

New York State Route 17/future I-86 crosses the town on the river's south bank. New York State Route 17C follows the river along the north bank. New York State Route 38 and New York State Route 96 converge north of Owego village.

The town is governed by a town supervisor and council members. According to the 2010 Census, the community's population was 15,987.

### Growth/Development Trends

The following table summarizes recent residential/commercial development since 2012 to present and any known or anticipated major residential/commercial development and major infrastructure development that has been identified in the next five years within the municipality. Refer to the map in 9.10.8 of this annex which illustrates the hazard areas along with the location of potential new development.

**Table 9.10-1. Growth and Development**

Property or Development Name	Type (e.g. Res., Comm.)	# of Units / Structures	Location (address and/or Parcel ID)	Known Hazard Zone(s)	Description/Status of Development
<b>Recent Development from 2012 to present</b>					
Taylor Garbage Transfer Station	Comm.	1	5730 State Route 434 142.05-1-2.31	None	Completed
Wagner Lumber Fire Reconstruction	Comm.	3	4060 Gaskill Road 119.00-2-2	None	Completed
Upstate Shredding Microfines Recycling Plant & Dry Media Plant	Comm.	2	1 Recycle Drive 106.00-3-22.17	0.2% Annual Chance Flood Event	Completed
Perkins Restaurant & Bakery	Comm.	1	7664 State Route 434 153.07-1-40.11	1% Annual Chance Flood Event	Completed
Apalachin Fire Department	Comm.	1	230 Pennsylvania Avenue 142.14-1-40	None	Completed
Broadway Group Dollar General	Comm.	1	7146 State Route 434 142.18-3-11.12	1% Annual Chance Flood Event	Completed
<b>Known or Anticipated Development in the Next Five (5) Years</b>					
Marshland Trail Estates	18	Marsh Trail Way	0.2% Annual Chance Flood Event	Approval granted no building permit issued	18

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



### 9.10.3 Natural Hazard Event History Specific to the Municipality

Tioga County has a history of natural and non-natural hazard events as detailed in Volume I, Section 5.0 of this plan. A summary of historical events is provided in each of the hazard profiles and includes a chronology of events that have affected the County and its municipalities. For the purpose of this plan update, events that have occurred in the County from 2012 to December 31, 2017 were summarized to indicate the range and impact of hazard events in the community. Information regarding specific damages is included, if available, based on reference material or local sources. This information is presented in the table below. For details of these and additional events, refer to Volume I, Section 5.0 of this plan.

**Table 9.10-2. Hazard Event History**

Dates of Event	Event Type (Disaster Declaration if applicable)	Tioga County Designated?	Summary of Damages/Losses
6/14/15	N/A	N/A	In some areas, homes, schools and other businesses were flooded.
3/14/17	DR 4322	Yes	A Nor'easter moved up the eastern US coast on March 13th to late on the 14th. Heavy snow spread across parts of central New York and Pennsylvania late on March 13th. By late evening on the 14th snowfall amounts range from 8 to 33 inches of snow. After the strong area of low pressure moved northeast, lake effect snow bands formed producing more snow across the area on March 15, 2017. The Town of Owego requested public assistance for \$54,527.06 due to labor, equipment, material, contracts, and administrative costs associated with storm response and cleanup.
7/23/17	N/A	N/A	Rapid rises of area streams and creeks resulted in severe flash flooding for the Nichols, NY (\$284K in damages) and Vestal, NY areas.
8/13/18-8/14/18	DR 4397	Yes	Rapid rise of area streams and creeks resulted in severe flash flooding throughout Tioga & surrounding counties. Specifically, in the Town of Owego, lower Long Creek Road bridge was impacted and needed to be closed until a detour could be established (estimated bridge replacement/repair & town wide emergency road work damages \$1.0 million)

Notes:

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

### 9.10.4 Hazard Vulnerabilities and Ranking

The hazard profiles in Section 5.0 of this plan have detailed information regarding each plan participant's vulnerability to the identified hazards. This section provides a summary of exposure and impacts from significant hazards of concern as identified by the Town of Owego. For additional vulnerability information relevant to this jurisdiction, refer to Section 5.0.

#### Natural Hazard Risk/Vulnerability Risk Ranking

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



As discussed in Section 5.3 (Hazard Ranking), each participating town or village may have differing degrees of risk exposure and vulnerability compared to Tioga County as a whole. Therefore, each municipality ranked the degree of risk to each hazard as it pertains to their community. The table below summarizes the hazard risk/vulnerability rankings of potential natural hazards for the Town of Owego. The Town of Owego has reviewed the County hazard risk/vulnerability risk ranking table as well as its individual results to reflect the relative risk of the hazards of concern to the community.

**Table 9.10-3. Hazard Risk/Vulnerability Risk Ranking**

Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard <sup>a, b, c</sup>		Probability of Occurrence	Hazard Ranking
Drought	Damage estimate not available		Frequent	Medium
Flood	RCV Exposed to 1% Annual Chance Flood Event	\$0	Frequent	Medium
Severe Storm	100-year MRP	\$0	Frequent	High
	500-year MRP	\$264,897		
Severe Winter Weather	1% GBS	\$17,398,400	Frequent	High
	5% GBS	\$86,992,000		

Notes:

- \* Municipality adjusted the hazard ranking
- a. Building damage ratio estimates based on FEMA 386-2 (August 2001)
- b. Loss estimates for the severe storm and severe winter storm hazards are structural values only and do not include the value of contents.
- c. Loss estimates for the flood hazard represents both structure and contents.

### National Flood Insurance Program (NFIP) Summary

The following table summarizes the NFIP statistics for the Town of Owego.

**Table 9.10-4. NFIP Summary**

Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 100-year Boundary (3)
Owego (T)	196	433	\$23,427,867.00	79	14	121

Source: FEMA 2018

- Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA and are current as of February 28, 2018 and are summarized by Community Name. Please note the total number of repetitive loss properties excludes the severe repetitive loss properties. The number of claims represents claims closed by 2/28/2018. Total building and content losses from the claims file provided by FEMA Region 2.
- Total building and content losses from the claims file provided by FEMA Region 2.

### Critical Facilities at Risk

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

**Table 9.10-5. Potential Flood Losses to Critical Facilities**

Name	Type	Exposure		Potential Loss from 1% Flood Event		Addressed by Proposed Action
		1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	
Hazard	Hazmat	X	X	-	-	T. Owego-7
Hazard	Hazmat	X	X	-	-	T. Owego-7
Apalachin Family Care	Medical		X	-	-	-
Owego Township Water Pump #3	Potable Pump		X	-	-	T. Owego-8
Owego Township Water Pump #5	Potable Pump	X	X	-	-	T. Owego-8
Owego Township Water Pump #6	Potable Pump	X	X	40.00	-	T. Owego-8
Town of Owego Well 1	Well	X	X	-	-	T. Owego-14
Town of Owego Well 2	Well	X	X	-	-	T. Owego-17
Town of Owego Well 2	Well	X	X	-	-	T. Owego-17
Town of Owego Well 4	Well	X	X	-	-	T. Owego-17
Town of Owego WW Pump Station #1	WW Pump	X	X	-	-	T. Owego-10
Town of Owego WW Pump Station #10	WW Pump		X	-	-	T. Owego-10
Town of Owego WW Pump Station #11	WW Pump	X	X	-	-	T. Owego-10
Town of Owego WW Pump Station #3	WW Pump	X	X	-	-	T. Owego-10
Town of Owego WW Pump Station #4	WW Pump	X	X	-	-	T. Owego-10
Town of Owego WW Pump Station #8	WW Pump	X	X	-	-	T. Owego-10
Town of Owego Waste Water Treatment #1	WW Treatment	X	X	-	-	T. Owego-11
Town of Owego Waste Water Treatment #2	WW Treatment		X	-	-	T. Owego-5

Source: Tioga County GIS, FEMA 2012, and Hazus 4.2

## Identified Issues

The municipality has identified the following vulnerabilities within their community:

- Six structures on Pennsylvania Avenue in the Apalachin census-designated area of the Town of Owego are among those susceptible to flooding. The course of Pennsylvania Avenue is roughly parallel to Apalachin Creek. A once dry tributary of the creek that runs between the creek and Pennsylvania Avenue has become overwhelmed during several recent flood events.
- Marshland/Wicks Road area – repetitive flood losses

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

- Near river
- Areas by the Susquehanna River. Also low lying areas that have insufficient drainage areas (small culvert pipes/damaged pipes)
- Areas within floodplains

### 9.10.5 Capability Assessment

This section identifies the following capabilities of the local jurisdiction:

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

#### Planning and Regulatory Capability

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

**Table 9.10-6. Planning and Regulatory Tools**

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
<b>Planning Capability</b>				
Master Plan	1997	Town	P & Z	Town of Owego Comp Plan
Capital Improvements Plan	No	-	-	-
Floodplain Management / Basin Plan	3/2012	Town	P & Z	Chapter 125 – Zoning
Stormwater Management Plan	5/2015	Town	P & Z	Chapter 99
Open Space Plan	No	-	-	-
Stream Corridor Management Plan	No	-	-	-
Watershed Management or Protection Plan	No	-	-	-
Economic Development Plan	Yes	County	Economic Development and Planning Department	Tioga County 2020 Strategic Plan
Comprehensive Emergency Management Plan	No	-	-	-
Emergency Operation Plan	1/2017	Town	Supervisor	Emergency Operation Plan
Post-Disaster Recovery Plan	No	-	-	-
Transportation Plan	No	-	-	-
Strategic Recovery Planning Report	No	-	-	-
Other Plans:	-	-	-	-
<b>Regulatory Capability</b>				
Building Code	Yes	State & Local		NY State Building Code
Zoning Ordinance	1956	Town	Town Board	Zoning Chapter 125
Subdivision Ordinance	1970	Town	Planning Board	Chapter 103 Town of Owego Code



Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
NFIP Flood Damage Prevention Ordinance	4/2012	Federal, State, Local	P & Z	Zoning Chapter 125
NFIP: Cumulative Substantial Damages	No	-	-	-
NFIP: Freeboard	Yes	State, Local	P & Z	State mandated BFE+2 for single and two-family residential construction, BFE+1 for all other construction types
Growth Management Ordinances	No	-	-	-
Site Plan Review Requirements	1973	Town	Planning Board	Zoning Chapter 125
Stormwater Management Ordinance	1/2015	Town	P & Z	Chapter 99 Town of Owego Code
Municipal Separate Storm Sewer System (MS4)	1/2015	Town	Highway	Chapter 99 Town of Owego Code
Natural Hazard Ordinance	No	-	-	-
Post-Disaster Recovery Ordinance	No	-	-	-
Real Estate Disclosure Requirement	Yes	State	-	NYS mandate, Property Condition Disclosure Act, NY Code - Article 14 §460-467
Other (Special Purpose Ordinances [i.e., sensitive areas, steep slope])	-	-	-	-

### Administrative and Technical Capability

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

**Table 9.10-7. Administrative and Technical Capabilities**

Resources	Is this in place? (Yes or No)	Department/ Agency/Position
<b>Administrative Capability</b>		
Planning Board	Yes	Planning & Zoning Administrator
Mitigation Planning Committee	No	-
Environmental Board/Commission	No	-
Open Space Board/Committee	No	-
Economic Development Commission/Committee	No	-
Maintenance Programs to Reduce Risk	No	-
Mutual Aid Agreements	No	-
<b>Technical/Staffing Capability</b>		
Planner(s) or engineer(s) with knowledge of land development and land management practices	Yes	Planning & Zoning Administrator
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	Yes	Code Enforcement Officer



Resources	Is this in place? (Yes or No)	Department/ Agency/Position
Planners or engineers with an understanding of natural hazards	Yes	Planning & Zoning Administrator
NFIP Floodplain Administrator (FPA)	Yes	Planning & Zoning Administrator
Surveyor(s)	No	-
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	No	-
Scientist familiar with natural hazards	No	-
Emergency Manager	No	-
Grant writer(s)	Yes	Planning & Zoning Administrator
Staff with expertise or training in benefit/cost analysis	Yes	Planning & Zoning Administrator
Professionals trained in conducting damage assessments	Yes	Code Enforcement Officer

### Fiscal Capability

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

**Table 9.10-8. Fiscal Capabilities**

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

### Community Classifications

The table below summarizes classifications for community program available to the Town of Owego.

**Table 9.10-9. Community Classifications**

Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	4	12/31/17

Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Public Protection (ISO Fire Protection Classes 1 to 10)	No	-	-
NYSDEC Climate Smart Community	No	-	-
Storm Ready Certification	Yes	County	-
Firewise Communities classification	No	-	-
Natural disaster/safety programs in/for schools	No	-	-
Organizations with mitigation focus (advocacy group, non-government)	No	-	-
Public education program/outreach (through website, social media)	No	-	-
Public-private partnership initiatives addressing disaster-related issues	No	-	-

*Note:*

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

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

Criteria for classification credits are outlined in the following documents:

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

### **Self-Assessment of Capability**

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

**Table 9.10-10. Self-Assessment Capability for the Municipality**

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

### National Flood Insurance Program

#### NFIP Floodplain Administrator (FPA)

Debra Standiner, Planning & Zoning Administrator

#### Flood Vulnerability Summary

The municipality does not maintain lists/inventories of properties that have been flood damaged or identify property owners who are interested mitigation (e.g. elevation, acquisition). The FPA noted the number of structures damaged during flooding events has been reduced due to acquisition/demolition after flooding events. There are currently 2 homeowners seeking acquisition through the Repetitive Loss grants. Through NY Rising, 2 homeowners are elevating structures. Grant funding is the primary mitigation funding source.

#### Resources

The FPA is responsible for floodplain administration along with the Code Enforcement Officer who is a certified floodplain manager. The FPA stated that NFIP administration services or functions include permit review, performing inspections, damage assessments, and record keeping. GIS is handled through the Tioga County GIS Department. The FPA stated that the Town provides information regarding flood hazards/risk or flood risk reduction through NFIP insurance, mitigation, etc. as requested. The FPA stated that there are no barriers to running an effective floodplain management program and that after two significant floods within 5 years, the community is very aware of flooding and the need for floodplain management. The FPA stated that they feel adequately supported and trained to fulfill their responsibilities as the municipal floodplain administrator due to lack of training. The FPA would consider attending continuing education and/or certification training on floodplain management if it were offered in the County for all local floodplain administrators.

#### Compliance History

The community in good-standing in the NFIP. According to NYSDEC, the most recent Community Assistance Visit (CAV) was held on April 28, 2016.

#### Regulatory

The FPA stated that floodplain management regulations/ordinances meet the FEMA and State minimum requirements. A Special Use permit is required for commercial development occurring in the floodplain, in addition to the floodplain development permit. The SUP goes before the Town Planning Board and Zoning Board of Appeals. The Town has considered joining the Community Rating System in the past and would be interested in attending a seminar on the program if it were offered locally.





## Integration of Hazard Mitigation into Existing and Future Planning Mechanisms

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

### Planning

**Hazard Mitigation:** The Town of Owego actively participated in the 5-year update of the Tioga County Hazard Mitigation Plan. The Town continues to support the implementation, monitoring, maintenance, and updating of the plan.

**Master Plan:** The Town of Owego has an existing comprehensive plan, but it is in need of an update. The update to the plan would include areas of natural hazard risk (e.g. flood-prone areas, steep slopes). The Plan does not currently refer to the Countywide Hazard Mitigation Plan.

**Stormwater Plan:** The Town is an MS4 Regulated Community and has a formal Stormwater Management Plan. The plan does not specify projects/actions/initiatives to reduce the volume of stormwater, or otherwise mitigate stormwater flooding.

**Emergency Operations Plan:** The Town of Owego has an emergency operations plan which does not refer to the HMP

Other plans include an Economic Development Plan (County).

### Regulatory and Enforcement (Ordinances)

**Zoning, Subdivision, and Site Plan Review:** The Town of Owego's municipal zoning and site plan review ordinance (Chapter 125 of the municipal Code) and subdivision regulations (Chapter 103) consider natural hazard risk (e.g. the presence of floodplains, steep slopes, etc.). Any soil disturbance greater than 1 acre requires preparation of a SWPPP. Commercial development in the floodplain is subject to issuance of a Special Use Permit by the ZBA as well as issuance of a floodplain development permit

**Flood Damage Prevention Ordinance:** The Town of Owego's NFIP Flood Damage Protection Ordinance (found in Chapter 125 of the municipal Code) meets the minimum Federal and State NFIP regulatory requirements.

### Operational and Administration

**Mutual Aid:** The Town maintains mutual aid agreements with neighboring communities for continuity of operations. The Town also works to identify and develop agreements with entities that can provide support with FEMA/SOEM paperwork after disasters as well as agreements with qualified damage assessment personnel.

**Damage Assessment:** The Town works to develop damage assessment capabilities at the local level through training programs and the certification of qualified individuals (e.g. code officials, floodplain managers, engineers).

The Stormwater Management functions of the Town are carried out by the Debra Standing, Planning & Zoning Administrator. NFIP Floodplain Management functions in the Town are also carried out by Debra Standing, Planning & Zoning Administrator. The Planning Board and ZBA issue Special Use Permits for commercial development in the floodplain and ensure that any development occurs in compliance with federal, state and





local ordinances. The Town does not have any other Boards or Committees that include functions with respect to managing natural hazard risk.

Through various grant processes, Planning staff has developed BCA when necessary. The Code Enforcement Officer, who is also a certified floodplain manager, and staff have and can perform substantial damage estimates. The Planning Department staff has experience in preparing grant applications for mitigation projects. Town staff receive trainings or continuing professional education which supports natural hazard risk reduction. The FPA indicated that the Town does not have other hazard management programs in place.

According to the FPA, no Town staff have job descriptions that specifically include identifying and/or implementing mitigation projects/actions or other efforts to reduce natural hazard risk. The Code Enforcement Department participates in STBOA (building code officials' group) and the flood mitigation group.

### Funding

The Town of Owego's municipal/operating budget includes line items for mitigation projects/activities. The Town has a Capital Improvements Budget that includes budget for mitigation related projects. After flooding in 2006 the Town acquired several substantially damaged homes through FEMA disaster funding. Funding was 100%. After 2011 flooding, the Town acquired 23 substantially damages homes, also through FEMA disaster funding. Funding was 100%. Typically, local matches are made through budget funds. The Town does not have any other mechanisms to fiscally support hazard mitigation projects.

### Education and Outreach

**Flood Mitigation Outreach Committee:** The Town continues to participate with the County Flood Mitigation committee, which is currently involved with this plan update. Once work is done on this plan, the committee may consider conducting meetings for municipal officials and the public, as well as highway department training on stream maintenance. The committee will mail an information pamphlet to each property owners within the designated flood hazard area to let them know they are in such area, if they are unaware. Include information about preparing for floods and other natural hazards.

### Sheltering, Evacuation, and Temporary Housing

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

Tioga County, through a buildable land analysis, has identified areas suitable for placing temporary and permanent housing. Refer to Section 4.7.5 in Section 4 (County Profile) of Volume 1 of this plan for a description of resources identified by the county to support municipalities with the identification of evacuation, sheltering, and temporary and permanent housing. Each year, during the annual HMP progress meeting, the municipality will discuss their progress in identifying shelters, evacuation routes, and temporary and permanent housing for their community.

### Temporary and Permanent Housing

The Town of Owego identified the Post Trailer Park on Stephens Road as temporary housing for residents displaced by disaster. The Trailer Park is an existing mobile home park with available lots. It is located out of the floodplain and has a capacity of 20 homes. The Town noted that 90% of the Town is not located within the floodplain, allowing for a wide array of potential sites within the municipality suitable for relocating houses of the floodplain and/or building new homes once properties in the floodplain are acquired



### **Evacuation and Sheltering Needs**

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In the Town of Owego, the Red Cross provides sheltering needs. Tioga County Emergency Services handles all evacuations of residents when needed.

### **9.10.6 Mitigation Strategy and Prioritization**

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

### **Past Mitigation Initiative Status**

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

Table 9.10-11. Status of Previous Mitigation Actions

Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
						Cost		
1	Town Utilities & Flood Mitigation –  Wayside Lane & McFall Road – pumping station needs to be elevated  Depot Street & 434 – well house needs to be elevated  Penn. Ave and 434 – pumping station needs to be elevated	Flood		Town Administration	Complete		\$615,000	1. Discontinue Wayside station has been elevated and generator at 500 yr. elevation. New electric line is being run to wayside station. Pending completion. 75% complete.  2. Depot Street 100% complete.  Marshland Road: EPA mitigated environmental concerns at facility on Marshland Road and is still monitoring. W&W put in pumps on property to help with water pooling.  3. Complete
						Level of Protection	Wayside station and generator to 500yr elevation	
						Damages Avoided; Evidence of Success	Floodwaters no longer reach structures	
2	Continue outreach by Flood Mitigation outreach committee which is working on series of meetings for municipal officials, public and highway dept training of stream maintenance.  Areas of Concern: Marshland Road Area repeatedly floods and issues with water not receding quickly after events. Environmental Concerns with manufacturing company experiencing flooding; site may be	Flood		Town Administration, Flood Mitigation Committee with support from NYSOEM, TCSWCD	Ongoing Capability	Cost		1. Discontinue  2.  3. Action is redundant to item 4
						Level of Protection		
						Damages Avoided; Evidence of Success		



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
	located over a superfund site. Landowners building berm on property impact to adjacent landowners. Consider area for FEMA buyout program. DEC should be contacted to look into superfund possibility. Landowners must comply with floodplain regulations, if adding fill to flood plain could be in violation.							
3	Flood Mitigation – Buy Out Program/Historically flooded areas -Kinney Road -Miller Beach -Hiawatha Road Recommendation - Town should educate property owners on benefits of buyout program and encourage areas to enroll during open periods. 5 houses in enrolled in FEMA buyout program (Kuenzli Road & Miller Beach Rd)	Flood		Town (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	Complete	Cost	\$4,735,851	1. Discontinue
						Level of Protection	100-year elevation	2.
						Damages Avoided; Evidence of Success	Houses are removed from 100-year floodplain and can no longer be damaged by flooding	3. Complete
4	Education of public officials to address resident concerns and residents. - Flood Mitigation committee working on series of meetings for municipal officials, public and highway dept training of stream maintenance.	Flood		Town Administration, Flood Mitigation Committee with support from NYSOEM, TCSWCD	Ongoing Capability	Cost		1. Include in 2018 HMP
						Level of Protection		2. Continue outreach and education by Flood Mitigation Committee
						Damages Avoided; Evidence of Success		3.



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (If project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
5	Box culvert on Foster Valley Road- Increase the structural stability and drainage capacity of the culvert on Foster Valley Road to alleviate stormwater flooding. The increased capacity will prevent excess water from undermining the road. Foster Valley Road is a major connection between the north and east portions of the Town of Owego.	Flood		Town of Owego Highway Dept with support from NYSOEM	Complete	Cost	\$413,386.49	1. Discontinue 2. 3. Complete
						Level of Protection	50% larger	
						Damages Avoided; Evidence of Success	No damage occurred during recent flash flood events	
6	Three undersized culverts along Gaylord Road. - Increase the structural stability and drainage capacity of the three culverts under Gaylord Road that are insufficient in size during flash flood events. The increased capacity will prevent excess water from undermining the road and making portions of the road inaccessible. There are twenty residential properties along this road.	Flood		Town of Owego Highway Dept with support from NYSOEM, TCWSCD	Complete	Cost	\$22,000	1. Discontinue 2. 3. Complete
						Level of Protection	50% larger	
						Damages Avoided; Evidence of Success	Although damages occurred during recent flash flood events, they were less than what occurred with the smaller culverts.	
7	Hickories Park located along the Susquehanna River, in the Town of Owego-Increase the drainage capacity of the entrance road to the Hickories Park which crosses Little Nanticoke Creek. During flooding, the road has been	Flood		Town of Owego Consulting Engineer with support from TCSWCD, NYSDOT, NYSOEM	Complete	Cost	\$501,000	1. Discontinue 2. 3. Complete
						Level of Protection	50% larger culverts	
						Damages Avoided; Evidence of Success	No damage occurred during recent flash flooding and flooding events	



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
	repeatedly washed away causing loss of income from camping and pavilion rental							
8	Hickories Park located in the Town of Owego along the Susquehanna River. Upgrade the electrical service to the Hickories Park, rather than merely replacing in kind, to service larger recreational vehicles	?		Town of Owego Consulting Engineer, Town of Owego Parks, NYSOEM	Complete	Cost	\$400,000	1. Discontinue
						Level of Protection	500-year flood elevation	2.
						Damages Avoided; Evidence of Success	Future damage will be avoided by removal of electrical stanchions prior to a major flooding event	3. Complete
9	Municipal sewer line servicing Hickories Park at park entrance. - Directional boring of municipal sewer line servicing Hickories Park to prevent interruption of service when flooding occurs due to damage to entrance road where sewer line is located.	Flood		Town Consulting Engineers, Town of Owego Utilities, TCSWCD	Complete	Cost	\$60,000	1. Discontinue
						Level of Protection	500-year flood elevation	2.
						Damages Avoided; Evidence of Success	No damage occurred during recent flash flooding and flooding events	3. Complete
10	Culvert under Highland Drive-Increase the drainage capacity of the culvert on Highland Drive, near the intersection with Frederick Drive, to alleviate stormwater flooding from the Glann Road Creek. This increased capacity will prevent excess water from undermining the	Flood		Town of Owego Highway Dept. with support from TCSWCD, NYSOEM	Complete	Cost	\$175,251.06	1. Discontinue
						Level of Protection	500-year flood elevation	2.
						Damages Avoided; Evidence of Success	No damage occurred during recent flash flooding and flooding events	3. Complete



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. 3. If discontinue, explain why.
	road and flooding residential properties along Highland Drive.							
11	Owego Town Hall, 2354 State Route 434, Apalachin, NY - Installation of permanent, automatic standby power for critical emergency service operation at the Owego Town Hall/New York State Police Barracks	All Hazards		Town Consulting Engineers with support from Town of Owego Building Department, NYSOEM	Complete	Cost	\$150,000	1. Discontinue
						Level of Protection	200 kW generator	2.
						Damages Avoided; Evidence of Success	No loss of power during recent storm events	3. Complete
12	Relocation of Town Highway Barn, Parks Department and Director of Utilities' Offices-The Town is proposing to construct a facility that will house the Town of Owego Highway Department, Park Department Office and Director of Utilities & Administrative Staff. Each of these facilities are currently located within the floodplain and regularly receive damage when flooding occurs. The project site is on property owned by the Town and is located outside of the floodplain.	Flood		Town Consulting Engineers with support from Town of Owego Highway Department, Parks Department, Utilities Department, Planning Department, NYSOEM	In Progress	Cost	Est \$7M	1. Include in 2018 HMP
						Level of Protection		2. Town of Owego Shared Services Facility – relocation of critical Town functions out of the floodplain
						Damages Avoided; Evidence of Success		3.
13	Retrofit structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority.	Flood, Severe Storm, Earthquake		Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	Complete	Cost	\$590,000	1. Discontinue
						Level of Protection	One elevation project on Pennsylvania Ave. 2 elevations projects on	2.



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. 3. If discontinue, explain why.
	Phase 1: Identify appropriate candidates for retrofitting based on cost-effectiveness versus relocation. <b>(See initiative #13 above addressing Town Highway Barn.)</b> Phase 2: Where retrofitting is determined to be a viable option, work with property owners toward implementation of that action based on available funding from FEMA and local match availability.						Hiawatha Road.	
						Damages Avoided; Evidence of Success	No damage occurred during recent flash flooding and flooding events	3. Complete
14	Purchase, or relocate structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority. <b>(See initiative #3 for property acquisition initiative addressing residences on Kinney Road, Miller Beach, and Hiawatha Road.)</b> Phase 1: Identify appropriate candidates for relocation based on cost-effectiveness versus retrofitting. Phase 2: Where relocation is determined to be a viable option, work with property owners toward implementation of that	Flood, Severe Storm		Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	Complete	Cost Level of Protection	\$125,000 100-year floodplain	1. Discontinue 2.
						Damages Avoided; Evidence of Success	Acquisition of Severe Repetitive Loss property at 1307 Marshland Road and will no longer be damaged by flooding	3. Complete





Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
	action based on available funding from FEMA and local match availability.							
15	Maintain compliance with and good-standing in the NFIP including adoption and enforcement of floodplain management requirements (e.g. regulating all new and substantially improved construction in Special Hazard Flood Areas), floodplain identification and mapping, and flood insurance outreach to the community. Further, continue to meet and/or exceed the minimum NFIP standards and criteria through the following NFIP-related continued compliance actions identified as Initiatives 17 – 28 (below).	Flood, Severe Storms		Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, ISO FEMA	Ongoing Capability	Cost		1. Include in 2018 HMP
						Level of Protection		2.
						Damages Avoided; Evidence of Success		3.
16	Begin the process to adopt higher regulatory standards to manage flood risk (i.e. increased freeboard, cumulative substantial damage/improvements).	Flood, Severe Storms		Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	No Progress	Cost		1. Discontinue
						Level of Protection		2.
						Damages Avoided; Evidence of Success		3. No need for more restrictive requirements at this time.
17	Conduct and facilitate community and public education and outreach for residents and businesses to include, but not be limited to, the following to promote and	All Hazards		Municipality with support from Planning Partners, NYSOEM, FEMA	In Progress	Cost		1. Include in 2018 HMP
						Level of Protection		2.
						Damages Avoided; Evidence of Success		3.



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
	effect natural hazard risk reduction: Provide and maintain links to the HMP website, and regularly post notices on the County/municipal homepage(s) referencing the HMP webpages. Prepare and distribute informational letters to flood vulnerable property owners and neighborhood associations, explaining the availability of mitigation grant funding to mitigate their properties, and instructing them on how they can learn more and implement mitigation. Use email notification systems and newsletters to better educate the public on flood insurance, the availability of mitigation grant funding, and personal natural hazard risk reduction measures. Work with neighborhood associations, civic and business groups to disseminate information on flood insurance and the availability of mitigation grant funding.							
18	Determine if a Community Assistance Visit (CAV) or Community Assistance	Flood, Severe Storms		NFIP Floodplain Administrator	Complete	Cost		1. Discontinue
						Level of Protection		2.



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. 3. If discontinue, explain why.
	Contact (CAC) is needed, and schedule if needed			with support from NYSDEC, NYSOEM, FEMA		Damages Avoided; Evidence of Success		3. Town of Owego had CAV in June 2016 and has addressed all concerns identified.
19	Have designated NFIP Floodplain Administrator (FPA) become a Certified Floodplain Manager through the ASFPM, and pursue relevant continuing education training such as FEMA Benefit-Cost Analysis.	Flood, Severe Storms		NFIP Floodplain Administrator	Complete	Cost		1. Discontinue
						Level of Protection		2.
						Damages Avoided; Evidence of Success		3. Either the Code Enforcement Officer or Floodplain Manager will become a Certified Floodplain Manager
20	Participate in the Community Rating System (CRS) to further manage flood risk and reduce flood insurance premiums for NFIP policyholders. This shall start with the submission to FEMA-DHS of a Letter of Intent to join CRS, followed by the completion and submission of an application to the program once the community's current compliance with the NFIP is established.	Flood, Severe Storms		NFIP Floodplain Administrator with support from NYSDEC, NYSOEM, FEMA	Complete	Cost		1. Discontinue
						Level of Protection		2.
						Damages Avoided; Evidence of Success		3. Program costs exceed potential savings.
21	Archive elevation certificates	Flood, Severe Storm		NFIP Floodplain Administrator	Complete	Cost		1. Discontinue
						Level of Protection		2.
						Damages Avoided; Evidence of Success		3. Currently archived as permanent records
22	Continue to support the implementation, monitoring, maintenance,	All Hazards		Municipality (via mitigation planning point	Complete	Cost		1. Include in 2018 HMP
						Level of Protection		2. Town will continue to participate in support of this HMP



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. 3. If discontinue, explain why.
	and updating of this Plan, as defined in Section 7.0			of contacts) with support from Planning Partners (through their Points of Contact), NYSOEM		Damages Avoided; Evidence of Success		3.
23	Complete the ongoing updates of the Comprehensive Emergency Management Plans	All Hazards		Municipality with support from NYSOEM	In Progress	Cost		1. Include in 2018 HMP 2. Continued support and involvement with Tioga County EMO 3.
						Level of Protection		
						Damages Avoided; Evidence of Success		
24	Create/enhance/maintain mutual aid agreements with neighboring communities for continuity of operations.	All Hazards		Municipality with support from Surrounding municipalities and County	Ongoing Capability	Cost		1. Include in 2018 HMP 2. Agreements are updated as needed. Ongoing practice. 3.
						Level of Protection		
						Damages Avoided; Evidence of Success		
25	Identify and develop agreements with entities that can provide support with FEMA/SOEM paperwork after disasters; qualified damage assessment personnel – Improve post-disaster capabilities – damage assessment; FEMA/SOEM paperwork compilation, submissions, record-keeping	All Hazards		Municipality with support from County, NYSOEM, FEMA	Ongoing Capability	Cost		1. Include in 2018 HMP 2. Continue to identify and develop agreements to support completion of paperwork after disasters. 3.
						Level of Protection		
						Damages Avoided; Evidence of Success		
26	Work with regional agencies (i.e. County and SOEM) to help develop damage assessment capabilities at the local	All Hazards		Municipality with support from County, NYSOEM	Ongoing Capability	Cost		1. Include in 2018 HMP 2. Develop damage assessment capabilities at the local level. 3.
						Level of Protection		
						Damages Avoided;		



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
	level through such things as training programs, certification of qualified individuals (e.g. code officials, floodplain managers, engineers).					Evidence of Success		
27	Participate in local, county and/or state level projects and programs to develop improved structure and facility inventories and hazard datasets to support enhanced risk assessment efforts. Such programs may include developing a detailed inventory of critical facilities based upon FEMA's Comprehensive Data Management System (CDMS) which could be used for various planning and emergency management purposes including: Support the performance of enhanced risk and vulnerability assessments for hazards of concern. Support state, county and local planning efforts including mitigation (including updates to the State HMP), comprehensive emergency management, debris management, and land use. Improved structural and facility inventories could	All Hazards		HMP Coordinator	In Progress	Cost		1. Include in 2018 HMP
						Level of Protection		2.
						Damages Avoided; Evidence of Success		3.



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. 3. If discontinue, explain why.
	incorporate flood, wind and seismic-specific parameters (e.g. first floor elevations, roof types, structure types based on FEMA-154 "Rapid Visual Screening of Buildings for Potential Seismic Hazards" methodologies). It is recognized that these programs will need to be initiated and supported at the County and/or State level, and will require training, tools and funding provided at the county, state and/or federal level.							



### Completed Mitigation Initiatives Not Identified in the Previous Mitigation Strategy

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

- The Town acquired a Severe Repetitive Loss Property at 1307 Marshland Road, which has been demolished and the site has been restored.

### Proposed Hazard Mitigation Initiatives for the Plan Update

The Town of Owego participated in a mitigation action workshop on July 11, 2018 and was provided the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 ‘Selecting Appropriate Mitigation Measures for Floodprone Structures’ (March 2007) and FEMA ‘Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards’ (January 2013).

Table 9.10-12 summarizes the comprehensive-range of specific mitigation initiatives the Town of Owego would like to pursue in the future to reduce the effects of hazards. Some of these initiatives may be previous actions carried forward for this plan update. These initiatives are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. Both the four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

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

Table 9.10-13 provides a summary of the prioritization of all proposed mitigation initiatives for the Plan update.

**Table 9.10-12. Proposed Hazard Mitigation Initiatives**

Project Number	Project Name	Description of Problem	Description of Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Potential Funding Sources	Estimated Timeline	Priority	Mitigation Category
T. Owego-1	Develop long-term solution to flooding of Pennsylvania Avenue properties	See Action Worksheet	See Action Worksheet	Flood	1, 2	No	No	County Public Works, Town Highway Department	Remove 6 families from harm's way, lessen need for EM personnel to save stranded families, lessen danger to emergency management officials and those traveling the road.	\$35,000	SWCD, NYSDEC	1 year	High	SIP
T. Owego-2	Remove 3 SRL properties from the floodplain	See Action Worksheet	See Action Worksheet	Flood	1-2	No	No	Building and Zoning Departments	Remove 3 families from harm's way, lessen emergency management resources needed to save stranded families, lessen danger to emergency management officials	\$450,000	FEMA HMGP and FMA	4 years	High	SIP
T. Owego-3	Town of Owego Fueling Station and Materials Storage Facility	See Action Worksheet	See Action Worksheet	Flood, Severe Storm, Severe Winter Storm	1-2, 1-9, 3-2	Yes	No	Town Consulting Engineers with support from Town of Owego Highway Department, Parks Department, Utilities Department, Planning Department, NYSOEM	Access to critical resources and assets needing during a disaster. Protection of highway department staff and materials.	\$1.5 million	WQIP Grant, FEMA HMGP and FMA with local capital improvements budget for local share	1 Year	High	SIP





Table 9.10-12. Proposed Hazard Mitigation Initiatives

Project Number	Project Name	Description of Problem	Description of Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Potential Funding Sources	Estimated Timeline	Priority	Mitigation Category
T. Owego-4 (previous action)	Continue outreach and education regarding hazards	The town currently has an outreach and education program in place regarding hazards; however, it needs to be updated frequently.	<ul style="list-style-type: none"> <li>• Provide and maintain links to the HMP website, and regularly post notices on the County/municipal homepage(s) referencing the HMP webpages.</li> <li>• Prepare and distribute informational letters to flood vulnerable property owners and neighborhood associations, explaining the availability of mitigation grant funding to mitigate their properties, and instructing them on how they can learn more and implement mitigation.</li> <li>• Use email notification systems and newsletters to better educate the public on flood insurance, the availability of mitigation grant funding, and personal natural hazard risk reduction measures.</li> </ul>	All Hazards	1-5, 1-7, 2-1, 2-2, 3-3, 3-4	No	No	Municipality with support from Planning Partners, FEMA	Medium	Low	Municipal Budget; HMA programs with local or county match	Short	High	EAP

Table 9.10-12. Proposed Hazard Mitigation Initiatives








Project Number	Project Name	Description of Problem	Description of Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Potential Funding Sources	Estimated Timeline	Priority	Mitigation Category
			<ul style="list-style-type: none"> <li>Work with neighborhood associations, civic and business groups to disseminate information on flood insurance and the availability of mitigation grant funding.</li> </ul>											
T. Owego-5 (previous action)	Elevation of motor control center at Sewage Treatment Plant #2	The motor control center at Sewage Treatment Plant #2 is exposed to flood damages as it is located in the floodplain. This impacts the continuity of operations during a flood event and poses a risk to life and safety of residents.	Elevate motor control center above the 500-year flood level	Flood	1-1, 1-4, 6-3	Yes 	No	Town Administration	Reduces or eliminates flood damage to motor control center, continuity of operations	\$100,000+	FEMA HMGP and FMA	Within 2 years	Medium	SIP
T. Owego-6 (previous action)	Standby power to sewage pump stations	Two sewage pump stations do not have backup power. They are difficult to reach during flood events and need to be monitored to ensure no	Provide standby power to 2 sewage pump stations that are difficult to reach during flood events. The generators will be elevated to protect from a 500-year flood event.	Flood	1-1, 1-4, 6-3	Yes 	No	Town Administration	Allows pumps to run during power outages, reduces risk of surface waste discharge	\$50,000	FEMA HMGP and PDM	1 year	Medium	SIP

Table 9.10-12. Proposed Hazard Mitigation Initiatives

Project Number	Project Name	Description of Problem	Description of Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Potential Funding Sources	Estimated Timeline	Priority	Mitigation Category
T. Owego-7	Critical Facilities – hazmat facilities	There are two hazmat located in the Town; however, the Town does not have jurisdiction over them. All six dams are located in the floodplain and may be exposed to flood damages.?	The Town will notify the facility owner / operator that their facility is located in the floodplain and should be mitigated to the 500-year event. The Town will provide different projects to address this problem.	Flood	1, 6	Yes 	No	Town Floodplain Administrator working with the facility owner/operator	Educating owner/operator of the potential flood risk to their facility; decrease risk of damages; allows for continuity of operations	<\$5,000	Municipal Budget	Less than 6 months	Medium	EAP
T. Owego-8	Critical Facilities – Water Pumps	There are three water pumps located in the floodplain and may be exposed to flood damages.	The Town will notify the facility owner / operator that their facility is located in the floodplain and should be mitigated to the 500-year event. The Town will provide different projects to address this problem.	Flood	1, 6	Yes 	No	Town Floodplain Administrator working with the facility owner/operator	Educating owner/operator of the potential flood risk to their facility; decrease risk of damages; allows for continuity of operations	<\$5,000	Municipal Budget	Less than 6 months	Medium	EAP
T. Owego-9	Critical Facilities – Apalachin Central Schools	The Apalachin Central Schools are located in the floodplain; however, the Town does not have jurisdiction over the facility. The facility may	The Town will notify the facility owner / operator that their facility is located in the floodplain and should be mitigated to the 500-year event. The Town will provide different projects to address this problem.	Flood	1, 6	Yes 	No	Town Floodplain Administrator working with the facility owner/operator	Educating owner/operator of the potential flood risk to their facility; decrease risk of damages; allows for continuity of operations	<\$5,000	Municipal Budget	Less than 6 months	Medium	EAP

**Table 9.10-12. Proposed Hazard Mitigation Initiatives**

Project Number	Project Name	Description of Problem	Description of Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Potential Funding Sources	Estimated Timeline	Priority	Mitigation Category
		be exposed to flood damages.												
T. Owego-10	Critical Facilities – Wastewater Pump Stations	There are six pump stations located in the floodplain and exposed to flood damages.	The Town will notify the facility owner / operator that their facility is located in the floodplain and should be mitigated to the 500-year event. The Town will provide different projects to address this problem.	Flood	1, 6	Yes 	No	Town Floodplain Administrator working with the facility owner/operator	Educating owner/operator of the potential flood risk to their facility; decrease risk of damages; allows for continuity of operations	<\$5,000	Municipal Budget	Less than 6 months	Medium	EAP
T. Owego-11	Critical Facilities – Wastewater Pump Treatment Plants	There are two wastewater treatment plants located in the floodplain and exposed to flood damages.	The Town will notify the facility owner / operator that their facility is located in the floodplain and should be mitigated to the 500-year event. The Town will provide different projects to address this problem.	Flood	1, 6	Yes 	No	Town Floodplain Administrator working with the facility owner/operator	Educating owner/operator of the potential flood risk to their facility; decrease risk of damages; allows for continuity of operations	<\$5,000	Municipal Budget	Less than 6 months	Medium	EAP
T. Owego-12 (previous action)	Develop a Shared Services Facility for the Highway, Utilities and Parks Departments	See Action Worksheet	See Action Worksheet	Flood	All	Yes	No	Town Highway Department	Maintain continuity of operations for the Highway Department during and immediately after flood events. Keep staff and resources in one location. The structure would allow COOP of Utilities & Parks efforts.	\$7 million	CFA, NY Rising and local match	One Year	High	SIP

**Table 9.10-12. Proposed Hazard Mitigation Initiatives**



Project Number	Project Name	Description of Problem	Description of Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Potential Funding Sources	Estimated Timeline	Priority	Mitigation Category
T. Owego-13 (NYR project)	DPW, Parks, and Utilities Office Relocation	During Hurricane Irene and Tropical Storm Lee, the Town of Owego's Department of Public Works (DPW) facility suffered extensive damage due to flooding. The DPW offices had to be temporarily relocated to the Town Hall Campus. All related highway equipment was stored at the Town Hall Campus location, 2354 NY State Route 434, for 6 months following the storm.	This project will create a new shared services campus located outside of the 100-year floodplain. The project goal is to house the Town (and some selected Village) offices to ensure continuous municipal service delivery during future storm events. This project includes construction of a new facility at the existing Town Hall Campus that will house the Town's highway equipment, Sewer and Water Departments, and Parks Offices in one new building. It is anticipated that the new building will measure approximately 12,620 SF, most of which will house the Town's highway equipment.	Flood, Severe Storm, Severe Winter Storm	All	Yes	No	Town Board, Town DPW, Town Parks	Reduces flood risk to the Town and Village municipal operations; consolidates town operations into one campus; ensures continuous operations of municipal services	\$2,300,000	NY Rising, FEMA HMGP and FMA, Municipal Budget	2 years	Medium	SIP
T. Owego-14 (NYR project)	Main Street Water Pump House and Well Head Replacement	During Hurricane Irene and Tropical Storm Lee, the Town of Owego's	Meet an urgent need to replace Main Street Water Pump House & Well Head redevelopment, which was destroyed during Tropical Storm Lee.	Flood, Severe Storm	All	Yes 	No	Town Board, Town DPW	Increase resiliency in the Town; increase ability to pump raw water to water plant; improve water quality and	\$1,000,000	NY Rising, FEMA HMGP and FMA, Municipal Budget	1 year	Medium	SIP

Table 9.10-12. Proposed Hazard Mitigation Initiatives

Project Number	Project Name	Description of Problem	Description of Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Potential Funding Sources	Estimated Timeline	Priority	Mitigation Category
		Main Street Water Pump House & Well Head located at 1313 Main Street in Apalachin, was destroyed. The facility has been out of service since the 2011 flood event. This project meets an urgent need to replace this critical facility.							provide uninterrupted potable water supply to residents					
T. Owego-15 (NYR project)	Gaylord Road Culvert Replacement	The existing Gaylord Road culvert was destroyed by rising floodwaters during Tropical Storm Lee.	Replace the existing Gaylord Road culvert with 35 feet of 20x12 precast concrete box culvert with reinforced concrete headwalls and wing walls. Construction will also include excavation, 1,200 cubic yards of select granular fill, 45 tons of asphalt pavement, 45 feet of bridge rails and assemblies, and topsoil and seed.	Flood, Severe Storm	All	No	No	Town DPW	Provide potential flood reduction for buildings located downstream of Gaylord Road	\$346,875	NY Rising, FEMA FMA and HMGP, Municipal Budget	6 months	Medium	SIP
T. Owego-16 (NYR project)	Water and Sewer Extensions	Development in the Town is concentrated in and around	Extend public water and sewer along Route 434 to encourage economic	Flood	All	No	No	Town Board, Town DPW	Reduce risk by encouraging new development	\$4,887,970	NY Rising, Municipal Budget, CDBG, FEMA	2 years	Medium	SIP

Table 9.10-12. Proposed Hazard Mitigation Initiatives

Project Number	Project Name	Description of Problem	Description of Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Potential Funding Sources	Estimated Timeline	Priority	Mitigation Category
	along Route 434.	the floodplain, which poses a threat to new and existing structures during periods of flood. The Town needs to encourage development outside of the floodplain	development located outside of the floodplain to promote economic growth and provide greater resiliency in the wake of future flood events						outside of the floodplain; With the addition of water and sewer, property along Route 434 would provide potential sites for relocation of critical facilities outside of the floodplain, which would ensure their ability to continuously operate during severe weather events		FMA and HMGP			
T. Owego-17	Critical Facilities – Wells	There are three wells located in the floodplain and exposed to flood damages.	The Town will notify the facility owner / operator that their facility is located in the floodplain and should be mitigated to the 500-year event. The Town will provide different projects to address this problem.	Flood	1, 6	Yes 	No	Town Floodplain Administrator working with the facility owner / operator	Educating owner/operator of the potential flood risk to their facility; decrease risk of damages; allows for continuity of operations	<\$5,000	Municipal Budget	Less than 6 months	Medium	EAP

Notes:

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

Acronyms and Abbreviations:

CAV Community Assistance Visit  
CRS Community Rating System

Potential FEMA HMA Funding Sources:

FMA Flood Mitigation Assistance Grant Program  
HMGP Hazard Mitigation Grant Program

Timeline:

The time required to complete the project

Cost:



DPW Department of Public Works  
 FEMA Federal Emergency Management Agency  
 FPA Floodplain Administrator  
 HMA Hazard Mitigation Assistance  
 N/A Not applicable  
 NFIP National Flood Insurance Program  
 OEM Office of Emergency Management

PDM Pre-Disaster Mitigation Grant Program

Estimated costs associated with implementation

Benefits:

The benefits that implementation of this project will provide.

Mitigation Category:

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

Critical Facility:

- Yes - Critical Facility located in 1% floodplain





Table 9.10-13. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community	Total	High / Medium / Low
T. Owego-1	Develop long-term solution to flooding of Pennsylvania Avenue properties	1	1	1	1	0	1	0	0	1	1	0	1	1	1	10	High
T. Owego-2	Remove 3 SRL properties from the floodplain	1	1	1	1	1	1	1	0	1	1	0	1	1	0	11	High
T. Owego-3	Town of Owego Fueling Station and Materials Storage Facility	1	1	1	1	0	0	0	0	1	1	1	1	1	1	10	High
T. Owego-4 (previous action)	Continue outreach and education regarding hazards	1	1	1	1	1	1	1	1	1	1	1	1	0	0	12	High
T. Owego-5 (previous action)	Elevation of motor control center at Sewage Treatment Plant #2	1	1	1	1	0	1	0	1	0	1	1	1	1	0	10	Medium
T. Owego-6 (previous action)	Standby power to sewage pump stations	1	1	1	1	0	1	0	0	0	1	1	1	1	0	9	Medium
T. Owego-7	Critical Facilities – hazmat facilities	1	1	1	1	0	0	0	0	0	1	0	1	0	0	6	Medium
T. Owego-8	Critical Facilities – Water Pumps	1	1	1	1	0	0	0	0	0	1	0	1	0	0	6	Medium
T. Owego-9	Critical Facilities – Apalachin Central Schools	1	1	1	1	0	0	0	0	0	1	0	1	0	0	6	Medium
T. Owego-10	Critical Facilities – Wastewater Pump Stations	1	1	1	1	0	0	0	0	0	1	0	1	0	0	6	Medium
T. Owego-11	Critical Facilities – Wastewater Pump Treatment Plants	1	1	1	1	0	0	0	0	0	1	0	1	0	0	6	Medium
T. Owego-12 (previous action)	Develop a Shared Services Facility for the Highway, Utilities and Parks Departments	1	1	1	1	0	0	0	0	1	1	1	1	0	1	9	High
T. Owego-13 (NYR project)	DPW, Parks, and Utilities Office Relocation	1	1	1	1	1	1	0	0	0	1	0	1	0	0	8	Medium



Table 9.10-13. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community	Total	High / Medium / Low
T. Owego-14 (NYR project)	Main Street Water Pump House and Well Head Replacement	1	1	1	1	1	0	0	0	0	1	0	1	0	0	7	Medium
T. Owego-15 (NYR project)	Gaylord Road Culvert Replacement	1	1	1	1	1	0	0	0	0	1	0	1	0	0	7	Medium
T. Owego-16 (NYR project)	Water and Sewer Extensions	1	1	1	1	1	1	0	0	0	1	0	1	0	0	8	Medium
T. Owego-17	Critical Facilities – Wells	1	1	1	1	0	0	0	0	0	1	0	1	0	0	6	Medium

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



### **9.10.7 Future Needs to Better Understand Risk/Vulnerability**

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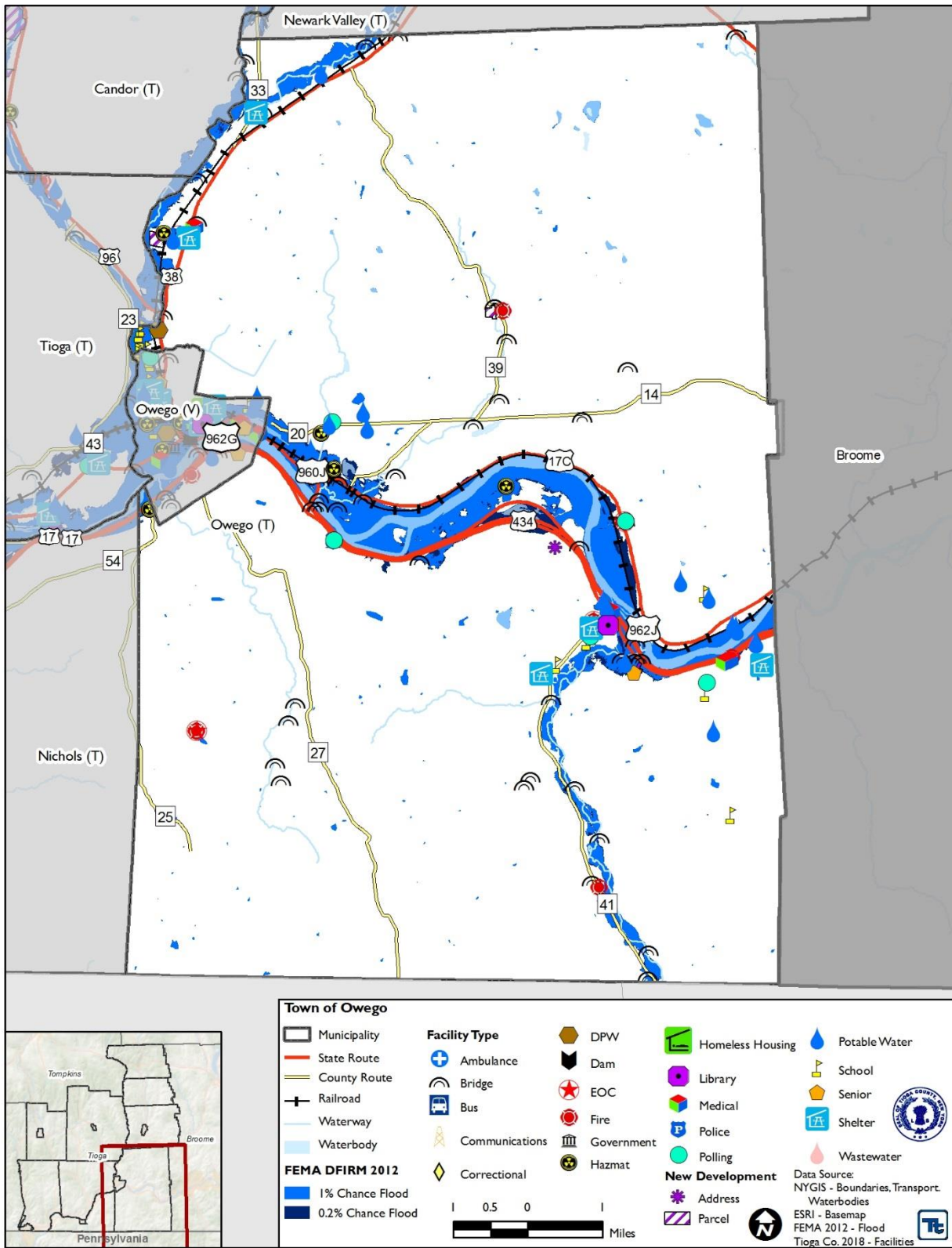
None at this time.

### **9.10.8 Hazard Area Extent and Location**

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

Figure 9.10-1. Town of Owego Hazard Area Extent and Location





Town of Owego Action Worksheet			
<b>Project Name:</b>	Develop long-term solution to flooding of Pennsylvania Avenue properties		
<b>Project Number:</b>	T. Owego-1		
<b>Risk / Vulnerability</b>			
<b>Hazard(s) of Concern:</b>	Flood		
<b>Description of the Problem:</b>	Six structures in the Apalachin census-designated area of the Town of Owego are among those susceptible to flooding. They sit on Pennsylvania Avenue, which begins in Apalachin and extends into other sections of the Town. The course of the roadway is roughly parallel to Apalachin Creek. A once dry tributary of the creek that runs between the creek and the Pennsylvania Avenue has become overwhelmed during several recent flood events. The situation is expected to become exacerbated as a result of increased precipitation stemming from projected climate change. The Town is unsure how to best address the problem. See attached news coverage of overwhelming flooding on Pennsylvania Avenue during an August 20118 storm event. Photos show residential properties and the roadway inundated with stormwater collected from levels of rainfall once described as extreme but which appear to be becoming more routine.		
<b>Action or Project Intended for Implementation</b>			
<b>Description of the Solution:</b>	Recruit the Tioga County Soil and Water Conservation District (SWCD) to conduct hydrological studies of the Creek, the tributary, flooded properties, and the adjacent built environment. Determine whether the banks of the tributary – once dry but now intermittently overflowing – should be upgraded to contain current levels of water flow. Develop funding estimates if this appears to be a feasible option, or explore acquisition, elevation, or relocation of homes if containment does not appear to be an effective solution. The need to address ever-pressing problems of this nature, and the resources contributed by Tioga SWCD, is highlighted in the attached article from a recent SWCD newsletter included below.		
<b>Is this project related to a Critical Facility?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
<b>Is this project related to a Critical Facility located within the 100-year floodplain?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
<b>Level of Protection:</b>	To be determined after study is complete	<b>Estimated Benefits (losses avoided):</b>	Remove 6 families from harm's way, lessen need for EM personnel to save stranded families, lessen danger to emergency management officials and those traveling the road.
<b>Useful Life:</b>	To be determined after study is complete		
<b>Estimated Cost:</b>	\$35,000		
<b>Plan for Implementation</b>			
<b>Prioritization:</b>	High	<b>Desired Timeframe for Implementation:</b>	6 months
<b>Estimated Time Required for Project Implementation:</b>	1 year	<b>Potential Funding Sources:</b>	SWCD, NYS DEC
<b>Responsible Organization:</b>	Department of Public Works	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	Stormwater Management Program
<b>Three Alternatives Considered (including No Action)</b>			
<b>Alternatives:</b>	<b>Action</b>	<b>Estimated Cost</b>	<b>Evaluation</b>
	No Action	\$0	Continued risk to homes and to cars traveling on Pennsylvania Avenue
	Install wider culverts on Pennsylvania Avenue	\$50,000	Will not address stream overflow
	Remove affected homes	\$150,000 per structure	Study to determine if this is necessary.
<b>Progress Report (for plan maintenance)</b>			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			



Town of Owego Action Worksheet		
<b>Project Name:</b>	Develop long-term solution to flooding of Pennsylvania Avenue properties	
<b>Project Number:</b>	T. Owego-1	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
<b>Life Safety</b>	1	Study will determine best course of action to protect vulnerable residents within the hazard area
<b>Property Protection</b>	1	Study will determine best course of action to protect property within flood hazard area.
<b>Cost-Effectiveness</b>	1	
<b>Technical</b>	1	Technical requirements of this project are feasible to implement.
<b>Political</b>	0	
<b>Legal</b>	1	Project located within the Town of Owego
<b>Fiscal</b>	0	
<b>Environmental</b>	0	
<b>Social</b>	1	Project can reduce vulnerable or isolated populations during flood events.
<b>Administrative</b>	1	Project to be completed by Department of Public Works
<b>Multi-Hazard</b>	0	
<b>Timeline</b>	1	Project can be completed in 6 months
<b>Agency Champion</b>	1	
<b>Other Community Objectives</b>	1	
<b>Total</b>	10	
<b>Priority (High/Med/Low)</b>	High	



Town of Owego Action Worksheet			
<b>Project Name:</b>	Remove 3 SRL properties from the floodplain		
<b>Project Number:</b>	T. Owego-2		
<b>Risk / Vulnerability</b>			
<b>Hazard(s) of Concern:</b>	Flood		
<b>Description of the Problem:</b>	Because of its location near several water bodies, parts of the Town of Owego lie in the floodplain. There are 3 SRL properties in Town neighborhoods, including Endicott, and Apalachin. In the long run, the Town would like to remove from the floodplain as many of the 93 RL/SRL structures as possible. It will start by working with the homeowners who own the identified SRL properties on Marshland Road and Wicks Roads.		
<b>Action or Project Intended for Implementation</b>			
<b>Description of the Solution:</b>	Remove 3 SRL properties on Marshland and Wicks Roads. The collective assessed value of the properties is \$184,000, although the cumulative and collective repetitive losses total a greater amount. The project would include acquiring and demolishing the structure from the flood plain, removing families from harm's way, and reducing future losses.		
<b>Is this project related to a Critical Facility?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
<b>Is this project related to a Critical Facility located within the 100-year floodplain?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
<b>Level of Protection:</b>	500-year event – structures no longer in floodplain	<b>Estimated Benefits (losses avoided):</b>	Remove 3 families from harm's way, lessen emergency management resources needed to save stranded families, lessen danger to emergency management officials
<b>Useful Life:</b>	75		
<b>Estimated Cost:</b>	\$150,000 per structure		
<b>Plan for Implementation</b>			
<b>Prioritization:</b>	high	<b>Desired Timeframe for Implementation:</b>	4 years
<b>Estimated Time Required for Project Implementation:</b>	2 years	<b>Potential Funding Sources:</b>	FEMA HMGP
<b>Responsible Organization:</b>	Building and Zoning Department	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	Floodplain Management Program
<b>Three Alternatives Considered (including No Action)</b>			
<b>Alternatives:</b>	<b>Action</b>	<b>Estimated Cost</b>	<b>Evaluation</b>
	No Action	\$0	Continued risk to homes/residents
	Elevate the properties	\$175,000/property	The properties are older, previously flooded residences and not structurally sound enough to withstand elevation.
	Relocate the structures	\$750,000	Land outside the floodplain is expensive, making the cost of relocation prohibitive.
<b>Progress Report (for plan maintenance)</b>			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			



Town of Owego Action Worksheet		
<b>Project Name:</b>	Remove 3 SRL properties from the floodplain	
<b>Project Number:</b>	T. Owego-2	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Acquisition of SRL properties can reduce vulnerable population in the floodplain
Property Protection	1	Demolishing SRL properties can ensure that future losses of property can be mitigated
Cost-Effectiveness	1	Acquisition of properties is more cost effective than other alternatives
Technical	1	
Political	1	
Legal	1	Properties located within the Town of Owego
Fiscal	1	FEMA HMGP
Environmental	0	
Social	1	Will reduce impacted populations
Administrative	1	Town of Owego working with homeowners
Multi-Hazard	0	
Timeline	1	Project can be completed within 4 years
Agency Champion	1	
Other Community Objectives	0	
Total	11	
Priority (High/Med/Low)	High	





Town of Owego Action Worksheet			
<b>Project Name:</b>	Town of Owego Fueling Station and Materials Storage Facility		
<b>Project Number:</b>	T. Owego-3		
<b>Risk / Vulnerability</b>			
<b>Hazard(s) of Concern:</b>	Flood		
<b>Description of the Problem:</b>	<p>Town-owned vehicles are now refueled at Scott Smith &amp; Son, whose 8 Delphine Street location is in an area with a .02% chance of annual flooding, in the of the Village of Owego. The business sits 2,728 feet (about 1/2 mile) east of Owego Creek and roughly 6/10 of a mile north of the Susquehanna River. The site serves as the fueling station for all town motor vehicle -- highway department dump trucks, maintenance vehicles, Utilities Department bucket trucks, and cars used by municipal employees. There is a chance that no one from Scott Smith &amp; Son will be able to reach the facility to turn on fuel pumps in the event of a major disaster, in which case fuel would not be available to town vehicles attempting to either reach the workplace or respond to emergencies during a disaster. Scott Smith &amp; Son provides excellent service but its location in the flood zone is problematic.</p>		
<b>Action or Project Intended for Implementation</b>			
<b>Description of the Solution:</b>	<p>Relocation of facilities to Town Hall Campus site, which is located out of the floodplain. The Town is planning to build near Town Hall a new Highway Department Barn, which will house salt, dirt, and tools for road maintenance. There are also plans to construct a Shared Services Building on this site, which would include Highway Department offices. Moving refueling operations will afford an element of safety to fuel supplies and consolidate all facets of Highway Department operations so that manpower and materials are close at hand in the event of an emergency.</p>		
<b>Is this project related to a Critical Facility?</b>	Yes	<input checked="" type="checkbox"/>	No <input type="checkbox"/>
<b>Is this project related to a Critical Facility located within the 100-year floodplain?</b>	Yes	<input type="checkbox"/>	No <input checked="" type="checkbox"/>
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
<b>Level of Protection:</b>	>500-year flood	<b>Estimated Benefits (losses avoided):</b>	Access to critical resources and assets needing during a disaster. Protection of highway department staff and materials.
<b>Useful Life:</b>	50 years		
<b>Estimated Cost:</b>	\$1.5 million		
<b>Plan for Implementation</b>			
<b>Prioritization:</b>	High	<b>Desired Timeframe for Implementation:</b>	12 months
<b>Estimated Time Required for Project Implementation:</b>	9-12 months	<b>Potential Funding Sources:</b>	WQIP Grant & Town funds
<b>Responsible Organization:</b>	Town Highway Department	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	Town of Owego Comprehensive Plan
<b>Three Alternatives Considered (including No Action)</b>			
<b>Alternatives:</b>	<b>Action</b>	<b>Estimated Cost</b>	<b>Evaluation</b>
	No Action	\$0	Continued inaccessibility to fuel
	Utilization of existing material storage facility	\$2 million	This site is located within the 100-year floodplain.
	Utilization of Town property along State Route 38.	\$10 million	Site is too far removed for efficient Highway, Parks and Utilities operations.
<b>Progress Report (for plan maintenance)</b>			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			



Town of Owego Action Worksheet		
<b>Project Name:</b>	Town of Owego Fueling Station and Materials Storage Facility	
<b>Project Number:</b>	T. Owego-3	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Provide services to the residents of the Town and increase their safety during hazard events
Property Protection	1	Protect the building from flood damages by removing out of the floodplain
Cost-Effectiveness	1	
Technical	1	
Political	0	
Legal	0	
Fiscal	0	Need grant funding to complete project
Environmental	0	
Social	1	
Administrative	1	
Multi-Hazard	1	All hazards
Timeline	1	Completed within 5 years
Agency Champion	1	
Other Community Objectives	1	
Total	10	
Priority (High/Med/Low)	High	



Town of Owego Action Worksheet			
<b>Project Name:</b>	Develop a Shared Services Facility for the Highway, Utilities and Parks Departments		
<b>Project Number:</b>	T. Owego-12		
<b>Risk / Vulnerability</b>			
<b>Hazard(s) of Concern:</b>	Flood, Severe Storm		
<b>Description of the Problem:</b>	During flood events of Q100 or greater, the Town Highway Barn, Parks Department and office for the Director of Utilities all become inundated with floodwaters, rendering the facilities and offices useless during and after the event.		
<b>Action or Project Intended for Implementation</b>			
<b>Description of the Solution:</b>	Construct a facility on the Town Hall property located on Route 434, which is outside of the floodplain. The new structure would be large enough to house the Highway Barn and offices for the Director of Utilities and the Parks Department. The human resources and assets of these functions are considered critical resources that would remain on duty during a disaster event, which means departments needs safe facilities to house staff and equipment. The departments respond to disaster events, so the Town must provide facilities to safely house staff and assets. Parks personnel may respond to issues affecting recreational assets, or the team may be called on to assist other departments in carrying out disaster preparedness or response activities.		
<b>Is this project related to a Critical Facility?</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
<b>Is this project related to a Critical Facility located within the 100-year floodplain?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
<b>Level of Protection:</b>	100-year flood event – facility will be constructed outside of the floodplain	<b>Estimated Benefits (losses avoided):</b>	Maintain continuity of operations for the Highway Department during and immediately after flood events. Keep staff and resources in one location. The structure would allow COOP of Utilities & Parks efforts.
<b>Useful Life:</b>	75 years		
<b>Estimated Cost:</b>	\$7 million		
<b>Plan for Implementation</b>			
<b>Prioritization:</b>	High	<b>Desired Timeframe for Implementation:</b>	12 months
<b>Estimated Time Required for Project Implementation:</b>	9-12 months	<b>Potential Funding Sources:</b>	CFA, NY Rising and local match
<b>Responsible Organization:</b>	Town Highway Department	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	Town Comprehensive Plan
<b>Three Alternatives Considered (including No Action)</b>			
<b>Alternatives:</b>	<b>Action</b>	<b>Estimated Cost</b>	<b>Evaluation</b>
	No Action	\$0	Continued damage to buildings and equipment, interruption of services.
	Relocate only the Highway Department	\$5 million	Parks and Utilities Departments must still be relocated to mitigate their current situation.
	Relocate Utilities and Parks Departments to Town Hall	\$2 million	Inadequate space at Town Hall, construction of an addition would be necessary.
<b>Progress Report (for plan maintenance)</b>			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			



Town of Owego Action Worksheet		
<b>Project Name:</b>	Develop a Shared Services Facility for the Highway, Utilities and Parks Departments	
<b>Project Number:</b>	T. Owego-12	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	Continuity of operations
Cost-Effectiveness	1	
Technical	1	
Political	0	
Legal	0	
Fiscal	0	Need to seek grant funding to complete project
Environmental	0	
Social	1	
Administrative	1	
Multi-Hazard	1	Flood, Severe Storm
Timeline	1	Completed within five years
Agency Champion	0	
Other Community Objectives	1	
<b>Total</b>	9	
<b>Priority (High/Med/Low)</b>	High	



Tioga County Jurisdictional Annex Review Sign-Off Sheet  
Signatures indicate review of annex content by the municipal official

TOWN OF OWEGO  
MUNICIPALITY NAME

**Mayor/Administrator/Supervisor**

Douglas Castiglione  
Name

[Signature]  
Signature

11/15/18  
Date

**Fiscal/CFO**

\_\_\_\_\_  
Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

**Building Code Official**

Ronald Schmidt, CEO  
Name / Title  
CFPM

[Signature]  
Signature

11/15/18  
Date

**Floodplain Administrator**

Debra Standinger  
Name / Title  
Planning + Zoning Admin.

[Signature]  
Signature

11/15/18  
Date

**Emergency Manager**

\_\_\_\_\_  
Name / Title

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

**Land Use Planner**

\_\_\_\_\_  
Name / Title

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

**Public Works Director**

\_\_\_\_\_  
Name / Title

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

**Highway Superintendent**

\_\_\_\_\_  
Name / Title

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

**Police Department**

\_\_\_\_\_  
Name / Title

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

**Fire Department**

\_\_\_\_\_  
Name / Title

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

## 9.11 VILLAGE OF OWEGO

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



**2010 Population: 3,896**  
**Population in 100 year Floodplain (SFHA): 1,923**

**Land Area: 1,765.6 acres**  
**Land Area in Floodplain: 47.7%**  
**NFIP policies: 448**  
**NFIP Policies in SFHA: 337**  
**NFIP Claims: 699**  
**Total NFIP Losses: \$27.9 million**



**Number of Buildings: 1467**  
**Total Replacement Building Value: \$830.7 million**  
**Number of Buildings in the SFHA: 734**  
**Total Replacement Building Value Exposed in the SFHA: \$425.2 million**

**Mitigation Focus  
Flood**



### 9.11.1 Hazard Mitigation Plan Point of Contact

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

Primary Point of Contact	Alternate Point of Contact
Mike Barrata, Mayor 178 Main Street, Owego, NY 13827 Phone: 607-687-3555	Jeffrey Soules, Supt. Public Works 178 Main Street, Owego, NY 13827 Phone: 607-687-1101 Email: <a href="mailto:soulesie@hotmail.com">soulesie@hotmail.com</a>

### 9.11.2 Municipal Profile

The Village of Owego is the county seat of Tioga County, New York. The Village of Owego is by the west town line of the Town of Owego and is west of Binghamton, New York. Owego is one of only twelve villages in New York still incorporated under a charter; all other New York villages have incorporated or re-incorporated under the provisions of Village Law.

According to the U.S. Census Bureau, the village has a total area of 2.7 square miles (7.0 km<sup>2</sup>), of which, 2.5 square miles (6.5 km<sup>2</sup>) of it is land and 0.2 square miles (0.6 km<sup>2</sup>) of it (8.12%) is water. Owego is on the Susquehanna River where the Owego Creek flows into the Susquehanna from the north. A bridge connects the village to the Southern Tier Expressway (New York State Route 17), which is on the south side of the river. Owego is located on NY-17C, south of the junction of NY-96 and NY-38.

The Village of Owego is governed by the village mayor and board of trustees. According to the 2010 Census, the community's population was 3,896.

### Growth/Development Trends

The following table summarizes recent residential/commercial development since 2012 to present and any known or anticipated major residential/commercial development and major infrastructure development that has been identified in the next five years within the municipality. Refer to the map in 9.11.8 of this annex which illustrates the hazard areas along with the location of potential new development.

**Table 9.11-1. Growth and Development**

Property or Development Name	Type (e.g. Res., Comm.)	# of Units / Structures	Location (address and/or Parcel ID)	Known Hazard Zone(s)	Description/Status of Development
<b>Recent Development from 2012 to present</b>					
Upgrade to the sewer plant – Phase 2	Sewer Plant	Plant itself	Route 434 (South Side Drive), Owego	Could not locate.	Completed
Apartment Complex	Residential	62 units	South Side Drive, Owego	Could not locate.	Completed
<b>Known or Anticipated Development in the Next Five (5) Years</b>					
Apartment Complex – Phase 2	Residential	62 units and 6 townhomes with 3 apartments in each	South Side Drive, Owego	Could not locate.	Planning Stage – getting permits, etc.

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

### 9.11.3 Natural Hazard Event History Specific to the Municipality

Tioga County has a history of natural and non-natural hazard events as detailed in Volume I, Section 5.0 of this plan. A summary of historical events is provided in each of the hazard profiles and includes a chronology of events that have affected the County and its municipalities. For the purpose of this plan update, events that have occurred in the County from 2012 to December 31, 2017 were summarized to indicate the range and impact of hazard events in the community. Information regarding specific damages is included, if available, based on reference material or local sources. This information is presented in the table below. For details of these and additional events, refer to Volume I, Section 5.0 of this plan.

**Table 9.11-2. Hazard Event History**

Dates of Event	Event Type (Disaster Declaration if applicable)	Tioga County Designated?	Summary of Damages/Losses
March 14-15, 2017	Severe Winter Storm (DR-4322)	Yes	Village of Owego experienced snow from this event; however, damages were minimal. The Village Public Works Department had overtime costs for snow removal.

Notes:

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

### 9.11.4 Hazard Vulnerabilities and Ranking

The hazard profiles in Section 5.0 of this plan have detailed information regarding each plan participant's vulnerability to the identified hazards. This section provides a summary of exposure and impacts from significant hazards of concern as identified by the Village of Owego. For additional vulnerability information relevant to this jurisdiction, refer to Section 5.0.

#### Natural Hazard Risk/Vulnerability Risk Ranking

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

As discussed in Section 5.3 (Hazard Ranking), each participating town or village may have differing degrees of risk exposure and vulnerability compared to Tioga County as a whole. Therefore, each municipality ranked the degree of risk to each hazard as it pertains to their community. The table below summarizes the hazard risk/vulnerability rankings of potential natural hazards for the Village of Owego. The Village of Owego has reviewed the County hazard risk/vulnerability risk ranking table as well as its individual results to reflect the relative risk of the hazards of concern to the community. The Village chose to change the overall ranking of flood from medium to high due to the amount of land located in the floodplain. The Village has experienced significant flood damages in the past and felt that flood is one of their top concerns.



**Table 9.11-3. Hazard Risk/Vulnerability Risk Ranking**

Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard <sup>a, b, c</sup>		Probability of Occurrence	Hazard Ranking
Drought	Damage estimate not available		Frequent	Medium
Flood	RCV Exposed to 1% Annual Chance Flood Event	\$341,054,000	Frequent	High*
Severe Storm	100-year MRP	\$0	Frequent	High
	500-year MRP	\$12,235		
Severe Winter Weather	1% GBS	\$4,861,690	Frequent	High
	5% GBS	\$24,308,450		

Notes:

- \* The Village of Owego chose to change the overall ranking from Medium to High for flood due to the amount of land in the 1% annual chance and 0.2% annual chance flood areas. Additionally, the Village has had significant flood damages in the past.
- a. Building damage ratio estimates based on FEMA 386-2 (August 2001)
- b. Loss estimates for the severe storm and severe winter storm hazards are structural values only and do not include the value of contents.
- c. Loss estimates for the flood hazard represents both structure and contents.

### National Flood Insurance Program (NFIP) Summary

The following table summarizes the NFIP statistics for the Village of Owego.

**Table 9.11-4. NFIP Summary**

Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 100-year Boundary (3)
Owego (V)	448	699	\$27,976,061.00	146	9	337

Source: FEMA 2018

1. Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA and are current as of February 28, 2018 and are summarized by Community Name. Please note the total number of repetitive loss properties excludes the severe repetitive loss properties. The number of claims represents claims closed by 2/28/2018. Total building and content losses from the claims file provided by FEMA Region 2.
2. Total building and content losses from the claims file provided by FEMA Region 2.

### Critical Facilities at Risk

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

**Table 9.11-5. Potential Flood Losses to Critical Facilities**

Name	Type	Exposure		Potential Loss from 1% Flood Event		Addressed by Proposed Action
		1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	
Charlton Registered Family Daycare*	Day Care	X	X	-	-	V. Owego-4
Dornblaser Registered Family Daycare*	Day Care	X	X	-	-	V. Owego-4
Town of Owego Highway Garage	DPW	X	X	8.41	13.65	
Village of Owego Public Works Garage	DPW	X	X	-	-	V. Owego-5
Owego Central Fire Station	EOC	X	X	-	-	V. Owego-2



Name	Type	Exposure		Potential Loss from 1% Flood Event		Addressed by Proposed Action
		1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	
Owego Central Station	Fire	X	X	-	-	V. Owego-2
Owego Station #2	Fire	X	X	-	-	
Owego Station #3	Fire	X	X	-	-	
Hazard	Hazmat	X	X	-	-	-
Hazard	Hazmat	X	X	-	-	-
HHAP*	Homeless Housing		X	-	-	-
Lourdes Owego Family Practice*	Medical	X	X	-	-	V. Owego-6
UHS Primary Care - Owego*	Medical		X	-	-	V. Owego-6
Owego Village Hall	Municipal		X	-	-	-
Owego Village Water Pump #1	Potable Pump	X	X	-	-	V. Owego-7
Owego Village Water Pump #2	Potable Pump	X	X	11.42	-	V. Owego-7
Owego Village Water Pump #3	Potable Pump	X	X	0	-	V. Owego-7
Owego Village Water Pump #5	Potable Pump		X	-	-	V. Owego-7
Owego Elementary School**	School	X	X	33.05	0.00	V. Owego-8
Owego-Apalachin Central School**	School	X	X	-	-	V. Owego-8
St. Patrick School*	School		X	-	-	V. Owego-8
Tioga County Rural Ministry	School		X	-	-	V. Owego-8
Long Meadow Apartments	Senior	X	X	-	-	-
Riverview Manor Health Care Center	Senior		X	-	-	-
Owego Apalachin CSD**	Shelter	X	X	-	-	V. Owego-8
Owego Apalachin Middle School**	Shelter	X	X	-	-	V. Owego-8
Owego Elementary School**	Shelter	X	X	-	-	V. Owego-8
Owego Free Academy (high school)**	Shelter	X	X	-	-	V. Owego-8
Well 1 – has been mitigated	Well	X	X	-	-	-
Well 3 – has been mitigated	Well	X	X	-	-	-
Well 4 – has been mitigated	Well	X	X	-	-	-
Owego Village WW Pump Station #1	WW Pump		X	-	-	V. Owego-9
Owego Village WW Pump Station #2	WW Pump	X	X	-	-	V. Owego-9
Owego Village WW Pump Station #3	WW Pump	X	X	-	-	V. Owego-9
Owego Village WW Pump Station #4	WW Pump	X	X	-	-	V. Owego-9
Owego Village Waste Water Treatment – has been mitigated	WW Treatment	X	X	-	-	-

Source: Tioga County GIS, FEMA 2012, Hazus 4.2

\*This critical facility is privately owned and the village does not have jurisdiction over it

\*\*The village does not own this facilities and does not have jurisdiction over it

The Village of Owego reviewed the list of critical facilities and determined that hazardous material facilities, homeless housing, and senior facilities were not critical for the purpose of essential services. As a result, the Village of Owego did not develop mitigation actions to protect those facilities to the 500-year flood level.

### Other Vulnerabilities Identified

The municipality has identified the following vulnerabilities within their community:

- Fire stations are located within the floodplain and prone to flooding. They are essential during emergencies as they provide services to the community. This is a proposed mitigation action for the village. Refer to Table 9.11-12 for details.
- The Village DPW is located within the floodplain and prone to flooding. It is essential to the community during a disaster as they are needed to provide services to the community. This is a proposed mitigation action for the village. Refer to Table 9.11-12 for details.
- Business District floods during major events – the Village has asked the DEC and USACE to perform a study to see what can be done to protect. This will be included in a Susquehanna River-wide study.
  - Right now, the Village just warns the business owners that a flood is coming
- Eastern part of Village by Brick Pond - the Village has asked the DEC and USACE to perform a study to see what can be done to protect – part of the Susquehanna River study
  - This part of the village floods during major events – 2006 and 2011 floods
  - Protected wetlands owned by Watermans Conservation – Village does not have jurisdiction

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

- Village of Owego, all. Nichols. Apalachin by sewer treatment plant and also Marshland Rd. Waverly. The entire River basin.
- The entire village of Owego especially the areas of ‘The Flats’ (West Ave, Talcott St., George St. and in between), Turtletown (East Front St, East Main St and in between), and Canawane (West Main, McMaster, Academy, West Front).
- Village of Owego (especially Front St), Apalachin, Waverly...any areas along Susquehanna River or with large creeks.
- The villages
- By the river and close roads houses
- Downtown Owego and other areas closest to the Susquehanna River.

### 9.11.5 Capability Assessment

This section identifies the following capabilities of the local jurisdiction:

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

### Planning and Regulatory Capability

The table below summarizes the regulatory tools that are available to the Village of Owego.



Table 9.11-6. Planning and Regulatory Tools

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
<b>Planning Capability</b>				
Master Plan	Yes (2018)	State	DOS	NYS DOS
Capital Improvements Plan	No	-	-	-
Floodplain Management / Basin Plan	Yes	NYS/Fed	DEC	Flood Damage Prevention Adopted 3/5/12, LL #2-2012
Stormwater Management Plan	No	-	-	-
Open Space Plan	Yes	Local	Planning	Comp. Plan, pg. 26-27. Adopted by resolution 3/24/14
Stream Corridor Management Plan	No	-	-	-
Watershed Management or Protection Plan	No	-	-	-
Economic Development Plan	Yes	Local	Planning	Comp. Plan, pg. 19-21
Comprehensive Emergency Management Plan	Yes	Village	Police and DPW	Annex of the County's CEMP
Emergency Operation Plan	No	-	-	-
Post-Disaster Recovery Plan	Yes	Local	Planning	Long Term Community Recovery; Comp. Plan, pg. 16 (NYRCR-March 2014)
Transportation Plan	No	-	-	-
Strategic Recovery Planning Report	No	-	-	-
Other Plans:	No	-	-	-
<b>Regulatory Capability</b>				
Building Code	Yes	State & Local	Code Enforcement Officer	Follow state building codes
Zoning Ordinance	Yes	Local and State	DOS	LL adopted 12/1/69 Ch. 195
Subdivision Ordinance	Yes	Local and State	DOS	LL adopted 2/7/72 Ch. 175
NFIP Flood Damage Prevention Ordinance	Yes	Federal, State, Local	Code Enforcement Officer	Adopted 3/15/12, LL #2-2012
NFIP: Cumulative Substantial Damages	No	-	-	-
NFIP: Freeboard	Yes	State, Local	Code Enforcement Officer	State mandated BFE+2 for single and two-family residential construction, BFE+1 for all other construction types
Growth Management Ordinances	No	-	-	-
Site Plan Review Requirements	Yes	Local	Planning Board and Code Enforcement	Adopted 10/20/2014, LL #4-2014
Stormwater Management Ordinance	No	-	-	-

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
Municipal Separate Storm Sewer System (MS4)	No	-	-	-
Natural Hazard Ordinance	No	-	-	-
Post-Disaster Recovery Ordinance	No	-	-	-
Real Estate Disclosure Requirement	Yes	State	-	NYS mandate, Property Condition Disclosure Act, NY Code - Article 14 §460-467
Other (Special Purpose Ordinances [i.e., sensitive areas, steep slope])	No	-	-	-

### Administrative and Technical Capability

The table below summarizes potential staff and personnel resources available to the Village of Owego.

**Table 9.11-7. Administrative and Technical Capabilities**

Resources	Is this in place? (Yes or No)	Department/ Agency/Position
<b>Administrative Capability</b>		
Planning Board	Yes	Planning Board
Mitigation Planning Committee	No	-
Environmental Board/Commission	No	-
Open Space Board/Committee	No	-
Economic Development Commission/Committee	No	-
Maintenance Programs to Reduce Risk	Yes	Vegetation maintenance, mow berm next to floodway once per year.
Mutual Aid Agreements	Yes	Fire and Emergency Services County Mutual Aid and NYS DHSES
<b>Technical/Staffing Capability</b>		
Planner(s) or engineer(s) with knowledge of land development and land management practices	No	-
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	No	-
Planners or engineers with an understanding of natural hazards	No	-
NFIP Floodplain Administrator (FPA)	Yes	Code Enforcement Officer or FPM
Surveyor(s)	No	-
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	No	-
Scientist familiar with natural hazards	No	-
Emergency Manager	No	-
Grant writer(s)	No	-
Staff with expertise or training in benefit/cost analysis	No	-
Professionals trained in conducting damage	No	-



Resources	Is this in place? (Yes or No)	Department/ Agency/Position
assessments		

### Fiscal Capability

The table below summarizes financial resources available to the Village of Owego.

**Table 9.11-8. Fiscal Capabilities**

Financial Resources	Accessible or Eligible to Use (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	Yes
Capital improvements project funding	Yes
Authority to levy taxes for specific purposes	Yes
User fees for water, sewer, gas or electric service	Yes
Impact fees for homebuyers or developers of new development/homes	No
Stormwater utility fee	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	Yes
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	-

### Community Classifications

The table below summarizes classifications for community program available to the Village of Owego.

**Table 9.11-9. Community Classifications**

Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	N/A	N/A
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	N/A	N/A
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	4-4Y	2-16
NYSDEC Climate Smart Community	No	N/A	N/A
Storm Ready Certification	No	N/A	N/A
Firewise Communities classification	No	N/A	N/A
Natural disaster/safety programs in/for schools	No	N/A	N/A
Organizations with mitigation focus (advocacy group, non-government)	No	N/A	N/A
Public education program/outreach (through website, social media)	No	N/A	N/A
Public-private partnership initiatives addressing disaster-related issues	No	N/A	N/A



Note:

N/A Not applicable  
NP Not participating  
- Unavailable

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

Criteria for classification credits are outlined in the following documents:

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

### Self-Assessment of Capability

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

**Table 9.11-10. Self-Assessment Capability for the Municipality**

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

### National Flood Insurance Program

#### NFIP Floodplain Administrator (FPA)

Village of Code Enforcement Officer





### **Flood Vulnerability Summary**

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The Village does maintain lists/inventories of properties that have been damaged by floods – records on file in the Village. The Village did a number of buyouts and elevations after the 2011 flood. Elevations and buyouts were paid for by FEMA disaster funds. 19 buyouts and 6 elevations throughout the Village. The Village maintains files of elevation certificates for homes in the community.

The Code Enforcement Officer performs substantial damage estimates in the Village. In 2011, the CEO, with the help of FEMA, performed estimates of every structure damages in the village.

As of the date of this plan update, there are several homeowners who are elevating their homes through NY Rising. Two homes are in the process. The Village plans to send out letters to homeowners who declined the buyout program after the 2011 flooding to see if they are interested in having their homes mitigated if funding becomes available.

### **Resources**

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CEO is the sole person assuming the responsibilities; however, they receive assistance from other staff. FPA services include permit reviews, inspections, damage assessments, record keeping, education and outreach. GIS services are performed through Tioga County. The Village used to hold open meetings and hand out flyers and information that will help residents before, during, and after flooding events. The Village keeps handouts at the office for those interested in learning more.

The FPA indicated that the only barrier to running an effective floodplain management program in the village is funding. The FPA stated that he would benefit from additional education and training workshops regarding floodplain administration.

### **Compliance History**

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The Village is in good standing with the NFIP. The most recent compliance audit was conducted on November 10, 2011.

### **Regulatory**

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Municipal zoning, subdivision, and site plan review processes consider natural hazards via SEQRA and require developers to take additional actions to mitigate natural hazard risks through the requirement of a floodplain development permit. This permit requires any new development be elevated above the BFE. The Planning Board is provided with the NY Rising Community Reconstruction Plan from March 2014 to help guide their decisions regarding natural hazard risk.

With regards to the Community Rating System, the Village has considered joining and put in an application. CRS came and conducted a preliminary site review and stated that the Village is in a good position to become a CRS community.

### **Integration of Hazard Mitigation into Existing and Future Planning Mechanisms**

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



## Planning

**Master Plan:** The Village Comprehensive Plan was adopted by resolution on March 24, 2014. It includes areas of natural hazard risk on page 16 where it also refers to the Countywide Hazard Mitigation Plan and the Village's annex in the Plan.

The Village is not an MS4 regulated community and does not have a formal Stormwater Management Plan. However, as part of the NY Rising Plan for the Village, one of the proposed projects is to develop a comprehensive stormwater management plan and construct stormwater improvements in the community. The Village does not have a re-development plan, growth plan, economic development plan, open space plan, watershed plan, stream corridor plan, post-disaster recovery plan, strategic recovery plan, or continuity of operations/continuity of government plan. However, the Village does have a Local Waterfront Revitalization Plan that was adopted in June of 2000 as well as a Comprehensive Emergency Management Plan.

## Regulatory and Enforcement (Ordinances)

**Flood Damage Prevention Ordinance:** According to the Flood Resiliency Coordinator, the Flood Damage Prevention Ordinance includes provisions that exceed the minimum Federal and state requirements. This includes:

- On streams with a regulatory floodway, no new construction, substantial improvements, or other development in the floodplain is permitted.
- Whenever any portion of a floodplain is authorized for development, the volume of space occupied by the authorized fill or structure below the base flood elevation shall be compensated for and balanced by a hydraulically equivalent volume of excavation taken from below the base flood elevation at or adjacent to the development site. All such excavations shall be constructed to drain freely to the watercourse. No area below the waterline of a pond or other body of water can be credited as a compensating excavation.
- For critical facilities located within an area or with any SFHA or within any area of 0.2% annual chance of flooding, a flood emergency plan must be prepared that describes how the functionality of the facility will be protected during the base flood. This must be completed in order to receive a floodplain development permit.

As part of the NY Rising Plan for the Village of Owego, one of the projects proposed was to update the Village's resiliency tools. This includes site plan review, zoning, and CRS ratings.

## Operational and Administration

**Vegetation Management:** The Village regularly mows the berm next to the floodway once per year.

The Village does not have a municipal planner or contracting firm. The Village does not have any staff or contract with firms that have experience with Benefit-Cost Analysis or have experience in preparing grant applications for mitigation projects. The CEO and DPW Supervisor are responsible for performing Substantial Damage Estimates.

The Planning Board is responsible for Site Plan Review and act on a Floodplain Development Permit. Stormwater Management functions are carried out by Tioga County Soil and Water with the assistance of the Village DPW. NFIP Floodplain Management functions are carried out by the Village DPW Superintendent.

Staff receive limited training and professional education which supports natural hazard risk reduction. The Flood Resiliency Coordinator noted that having staff officially trained as floodplain managers would be beneficial. Currently, no staff have job descriptions that include identifying or implementing mitigation



projects/actions to reduce natural hazard risk. However, staff do participate in the Southern Tier East Regional Planning & Development, Tioga County Soil & Water, and Susquehanna River Basin Commissions.

### **Funding**

The municipal operating budget does not include a line item for mitigation projects or activities but has a Capital Improvements Budget that does include funding for potential mitigation projects. The Village pursued \$3,000,000 in grant funding through NY Rising for mitigation related projects but has not been awarded the funding yet (no local match). The Village does not have any other mechanisms to fund such projects.

### **Education and Outreach**

The Village does not currently have any education or outreach initiatives but has identified the distribution of educational booklets as a potential outreach project. The Village is also looking into joining the Community Rating System (CRS) as well as highlighting outreach as a goal.

### **Sheltering, Evacuation, and Temporary Housing**

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

Tioga County, through a buildable land analysis, has identified areas suitable for placing temporary and permanent housing. Refer to Section 4.7.5 in Section 4 (County Profile) of Volume 1 of this plan for a description of resources identified by the county to support municipalities with the identification of evacuation, sheltering, and temporary and permanent housing. Each year, during the annual HMP progress meeting, the municipality will discuss their progress in identifying shelters, evacuation routes, and temporary and permanent housing for their community.

### **Temporary and Long-Term Housing**

A majority of the available in the Village is located within the floodplain. A small portion is located on steep slopes and not suitable for temporary housing. Additionally, there is no available land within the Village to relocate homes if properties are acquired.

### **Sheltering and Evacuation**

The Village does not have suitable locations for shelters within the Village. Residents would need to shelter outside of the community.

Evacuation routes will depend on the location of the event and which roads and bridges are open.

## **9.11.6 Mitigation Strategy and Prioritization**

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

### **Past Mitigation Initiative Status**

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

Table 9.11-11. Status of Previous Mitigation Actions

Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps	
						Cost		1.	Project to be included in 2018 HMP or Discontinue
1	Construction of a berm the height of the railroad bed along the north side of the Brick Pond	Flood	Area north of Brick Pond floods	Supervisor, Highway Dept, with support of SWCD	No Progress	Level of Protection	-	2.	
						Damages Avoided; Evidence of Success	-	3.	Not feasible. USACE and NYS DEC are preparing a study for this section of the Village – right now, this action will not be included in the 2018 Update
2	Conduct a Village-Wide Storm Drainage Study to provide recommendations to reduce Stormwater flooding.	Flood	The Village does not have a real stormwater system – most are dry wells. Stormwater flooding is an issue throughout the entire Village.	Supervisor, support of SWCD	No Progress	Cost	-	1.	Include
						Level of Protection	-	2.	Upgrade the stormwater system within the Village. Useful during heavy rains but not during flood events. Help once the river goes down to get the water out of the village.
						Damages Avoided; Evidence of Success	-	3.	-
3	Facilitate a loan or grant program to help fund elevation of heating, hot water, and electrical systems above the flood elevation.	Flood	Many of the utilities in homes are not above the flood elevation; exposing them to flood damage	Town administrator	In Progress	Cost	-	1.	Discontinue
						Level of Protection	-	2.	-
						Damages Avoided; Evidence of Success	-	3.	Completed for Village-owned facilities; working with homeowners to do this – homeowners will use their own money or seek grant funding as it becomes available
4	Study of the drainage system from Barnes Creek, Erie Street, Mountain Avenue, and Davis Hill Road into the Brick Pond.	Flood	Multiple roads in the village prone to flooding and damages	Supervisor, support of SWCD	Completed	Cost	-	1.	Discontinue
						Level of Protection	-	2.	-
						Damages Avoided; Evidence of Success	-	3.	Barnes Creek and Davis Hill are not in Village; the other areas are not a flood concern to the Village  Mitigation of these streets – new pumping station installed and new storm sewer line into Brick Pond (all the way down Erie to Brick Pond) – stormwater flooding was an issue but now it does not flood since the system was installed  Mountain Ave – removed some of the culverts and rerouted the storm lines so it

Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps	
								1. Project to be included in 2018 HMP or Discontinue	2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate).
								3. If discontinue, explain why.	
								goes to a sump pond which has an overflow that gravity feeds into Erie Street's stormwater line – since this work was done, Mountain Ave does not flood	
5	Extension of the Army Corps of Engineers-built berm along the east side of Owego Creek north of Talcott Street to Huntington Creek and along the south bank of Huntington Creek from the Owego Creek to NYS Route 38.	Flood	Floodprone area in the village	Supervisor, support of SWCD, ACOE	No Progress	Cost	-	1.	Include in 2018 HMP
						Level of Protection	-	2.	Continuation of monitoring and maintenance of gravel out of Oswego Creek.
						Damages Avoided; Evidence of Success	-	3.	-
6	Evaluation of the function and effectiveness of clapper valves on the Brick Pond, Susquehanna River, and Owego Creek.	Flood	Only have 4 clapper valves – Village maintains the valves. The Village inspects and greases them about four times a year.	Town DPW with support of Town Administrator	Ongoing Capability	Cost		1.	Discontinue
						Level of Protection		2.	-
						Damages Avoided; Evidence of Success		3.	Ongoing capability
7	Procure funding for structural elevation of 62 residential homes beginning 2012; may be phased project to include additional structures through 2015	Flood	Homes in the village floodprone and have experienced flood damage in the past	Municipality, NFIP Admin, NYSOEM, FEMA	In Progress	Cost	\$200,000/home	1.	Include in 2018 HMP
						Level of Protection	6 elevations	2.	Another 50 homes are interested in elevating – Village will apply for grant funding on behalf of the homeowners as it becomes available
						Damages Avoided; Evidence of Success	Homes no longer sustain flood damage	3.	-
8	Buyout or acquire initial 34 homes beginning 2012; may be phased project to include additional structures through 2015	Flood	Homes in the village floodprone and have experienced flood damage in the past	Municipality NFIP Admin NYSOEM FEMA	In Progress	Cost		1.	Include in 2018 HMP
						Level of Protection		2.	Some homeowners are still interested in buyouts – as funding is available, the village will work with the homeowners to obtain grant funding
						Damages Avoided; Evidence of Success		3.	-
9	Purchase of Trailer-Mounted Generators, and trailers: Generators needed at various public facilities in the event of	Flood Severe Storm Severe Winter Storm Earthquake	Lack backup power sources to use in the event of power outages in	Municipality NFIP Admin NYSOEM FEMA	In Progress	Cost	\$30,000/ Generator (installed) for police	1.	Include in 2018 HMP



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps	
								1. Project to be included in 2018 HMP or Discontinue	2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate).
	disaster they will supply back up power to facilities and ancillary operations such as public works, Police Dept. and Fire Department. Generators needed post-disaster September 2012 to supply back up power. A total of 3 needed for Public Works, Police Dept. and Sewer Plant. KW 200 or similar. \$20,000 each		the village				Fire Depart. - \$1600		
						Level of Protection		2.	Police department has backup power – funded through Village funds (but may have been reimbursed by FEMA); Fire department – half of buildings have them; the other half still need them; Public Works – NY Rising gave \$3 million – in the design stage to upgrade facilities which will include backup generator
						Damages Avoided; Evidence of Success		3.	-
10	Mobile Light Set (#, Type, Model) This modular light tower can be powered by a generator, welder/generator or other power source. (10.5 KW generator trailer mounted). Between \$10,000-\$15,000 each. A total of 3 needed for Public Works, Sewer Plant, and temporary evacuation center.	Flood Severe Storm Severe Winter Storm Earthquake	Village lacks mobile lights to use during emergencies and power outages	Municipality NFIP Admin NYSOEM FEMA	No Progress	Cost	-	1.	Discontinue
						Level of Protection	-	2.	-
						Damages Avoided; Evidence of Success	-	3.	The Village has access to borrowing them from County when needed
11	Draper Park Erosion Project. Potential erosion of the soil around the buried sewer pipe and catch basin and possible sewer line failure as a result of a future event can be avoided by protecting the area as follows. Apply Rip Rap along the river bank about 200 ft from the existing rip rap to the western park boundary, to include protecting the sewer catch basin/ crossing which is currently exposed to the river and could be undermined by flood water or damaged by floating debris during an event. There are also 2 large trees on either side of the sewer catch	Flood Severe Storm Severe Winter Storm	Park is susceptible to erosion and flooding	Municipality NYSOEM FEMA	Complete	Cost	-	1.	Discontinue
						Level of Protection	-	2.	-
						Damages Avoided; Evidence of Success	-	3.	Part of River Walk project

Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps	
	basis that have started to uproot from flooding which could also cause damage if not removed. Previous grant awarded for sidewalk and rip-rap which was partially completed. Damage is ongoing but exacerbated by flooding in 2012. Stabilize bank along Susquehanna River								
12	Dry Flood proofing Project Flood proofing overhead and walk-through doors for Fire Station #2. This includes repair/replacement, and/or sealing doors to keep floodwaters out. Fire station flooded in September 2012. Flood proof historical City Hall Building located at 178 Main Street to minimize flooding effects through mitigation.	Flood Severe Storm	Fire station is prone to flood damage	Municipality NFIP Admin NYSOEM FEMA	In Progress	Cost	\$60,000 for main fire station.	1.	Include in 2018 HMP
						Level of Protection	-	2.	-
						Damages Avoided; Evidence of Success	-	3.	May move the City Clerk office to new Public Works facility
13	Implement minor localized flood reduction projects to lessen frequency and severity of flooding and decrease potential flooding. -install a 2-mile flood wall along Owego Creek from Village to mouth of river. Creek backflows into river which is higher elevation than the creek which pushes floodwaters into residential area adjacent to the area. Affects roughly 60-80 structures. Approximately \$10 million. -Build up bank along Susquehanna River on Water Street by installing flood wall approximately ¼ mile long. Flooding effects include water overtopping bank of river and	Flood Severe Storm	Areas throughout the village are floodprone	Municipality NFIP Admin NYSOEM FEMA	No Progress	Cost	-	1.	Discontinue
						Level of Protection	-	2.	-
						Damages Avoided; Evidence of Success	-	3.	All part of the USACE and NYSDEC study – will not include these projects in the update but will include within the study action



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps	
								1. Project to be included in 2018 HMP or Discontinue	2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate).
	flooding approximately 30-40 homes and businesses along river's edge and damage to roads and debris problems. Road needs to be rebuilt due to frequent flooding and washouts. Approximately \$9 million. -Construct 1600' floodwall between riverwalk and commercial buildings located on south side of Front Street along river's edge. This would serve to protect buildings' foundations and minimize flooding. Approximately \$10 million.								
14	Extension of dike installed originally by ACE along Owego Creek (approximately 200 yards). Reoccurring flooding along the mouth of Owego Creek and Susquehanna River – proposed to enroll homes in the FEMA buyout program. In progress Village of Owego currently looking for funding source to have an engineering firm conduct a hydrologic analysis in order to show that constructing the berm will not affect the floodplain. Project would also include patching sections of the berm that have been eroded. Six homes 7 structures in this area have applied for the FEMA buyout program after the June 2006 flood. 2 Houses thru closing process and have been demolished.	Flood Severe Storm	Areas throughout the village are floodprone	Municipality NFIP Admin NYSOEM FEMA	No Progress	Cost	-	1.	Discontinue
						Level of Protection	-	2.	-
						Damages Avoided; Evidence of Success	-	3.	All part of the USACE and NYSDEC study – will not include these projects in the update but will include within the study action
15	Brick Pond – Hydrologic analysis, how does it affect and	Flood Severe Storm	Areas throughout the village are	Municipality TCSWCD	No Progress	Cost	-	1.	Discontinue
						Level of	-	2.	-



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps	
								1. Project to be included in 2018 HMP or Discontinue	2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate).
	how is it affected by Stormwater, River Flooding, Flood Mitigation?  In progress: Per NYSDEC requirements Waterman is working with USC and TCSWCD to restore to a wetland complex. (Stormwater from the Village will be eliminated from the system.)		floodprone	NYSDEC NYSOEM FEMA		Protection		3.	All part of the USACE and NYSDEC study – will not include these projects in the update but will include within the study action
16	Sewer Line along Susquehanna River: River bank stabilization needed for approximately 4400 feet along river to protect sewer main.  Site of River Walk; (an engineering firm is currently writing a proposal for shoreline stabilization, rip rap and sheet pilings.)	Flood Severe Storm Severe Winter Storm	Sewer line exposed to flood damage	Municipality NFIP Admin NYSOEM USACE FEMA	Complete	Cost	-	1.	Completed
						Level of Protection	-	2.	-
						Damages Avoided; Evidence of Success	-	3.	2/3 of sewer line was mitigated when the river walk was completed
17	Owego Creek – Finish building levee from school to Monkey Run (~200 yards) Area needs to be evaluated by Engineer to determine impact on hydrology.	Flood Severe Storm Severe Winter Storm	Levee does not protect all areas of the village	Municipality NFIP Admin NYSOEM USACE FEMA	In Progress	Cost	-	1.	Discontinue
						Level of Protection	-	2.	-
						Damages Avoided; Evidence of Success	-	3.	All part of the USACE and NYSDEC study – will not include these projects in the update but will include within the study action
18	Old Mill Raceway – make improvements to existing berm. DEC, SWCD and Village officials met to discuss options. Engineered study needs to be completed to show that improvements to berm would not affect flooding	Flood Severe Storm Severe Winter Storm	Area of the village is floodprone	Municipality NFIP Admin TCSWCD NYSOEM USACE FEMA	In Progress	Cost	-	1.	Discontinue
						Level of Protection	-	2.	-
						Damages Avoided; Evidence of Success	-	3.	All part of the USACE and NYSDEC study – will not include these projects in the update but will include within the study action
19	Monkey Run – Wooden Dam blown out In Progress. SWCD evaluated (1/08) and currently investigating ownership and possible solutions with the IDA.	Flood, Severe Storm, Earthquake	Area of the village is floodprone	Municipality NFIP Admin TCSWCD NYSOEM USACE FEMA	In Progress	Cost	-	1.	Discontinue
						Level of Protection	-	2.	-
						Damages Avoided; Evidence of	-	3.	All part of the USACE and NYSDEC study – will not include these projects in the update but will include within the study action





Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps	
								1. Project to be included in 2018 HMP or Discontinue	2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
20	Retrofit structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority. (See residential elevation initiative #1 above.) Phase 1: Identify appropriate candidates for retrofitting based on cost-effectiveness versus relocation. Address Owego-Apalachan Central School, Owego-Apalachin Middle School Phase 2: Where retrofitting is determined to be a viable option, work with property owners toward implementation of that action based on available funding from FEMA and local match availability.	Flood, Severe Storm, Earthquake	Structures in the village are not elevated and floodprone	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	Complete	Success			
						Cost	-	1.	Discontinue
						Level of Protection	-	2.	-
						Damages Avoided; Evidence of Success	-	3.	New elementary school was built 2' above BFE (FEMA funds); Middle School/High School do not flood; Built new administration and maintenance buildings – all above BFE (FEMA funds)
21	Purchase, or relocate structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority. Phase 1: Identify appropriate candidates for relocation based on cost-effectiveness versus retrofitting. (See residential acquisition initiative #2 above.) Phase 2: Where relocation is determined to be a viable option, work with property owners toward implementation of that action based on available funding from FEMA and local match availability.	Flood, Severe Storm	Structures in the village are not elevated and floodprone	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	In Progress	Cost	-	1.	Discontinue
						Level of Protection	-	2.	-
						Damages Avoided; Evidence of Success	-	3.	Repetitive to #8.
22	Maintain compliance with and good-standing in the NFIP	Flood, Severe Storms	Not applicable – village	Municipality (via Municipal	Ongoing Capability	Cost	-	1.	Discontinue
						Level of	-	2.	-

Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps	
						Protection		1. Project to be included in 2018 HMP or Discontinue	2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate).
	including adoption and enforcement of floodplain management requirements (e.g. regulating all new and substantially improved construction in Special Hazard Flood Areas), floodplain identification and mapping, and flood insurance outreach to the community. Further, continue to meet and/or exceed the minimum NFIP standards and criteria through the following NFIP-related continued compliance actions identified as Initiatives 23-34 (below).		participates in the NFIP	Engineer/NFIP Floodplain Administrator) with support from NYSOEM, ISO FEMA				3.	The village performs this activity on an ongoing basis. Therefore, it will not be included as a mitigation action but identified as a capability of the village.
23	Begin the process to adopt higher regulatory standards to manage flood risk (i.e. increased freeboard, cumulative substantial damage/improvements).	Flood, Severe Storms	Minimum requirements may not protect all areas from flooding	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	Ongoing Capability	Cost	-	1.	Discontinue
						Level of Protection	-	2.	-
						Damages Avoided; Evidence of Success	-	3.	The village performs this activity on an ongoing basis. Therefore, it will not be included as a mitigation action but identified as a capability of the village.
24	Conduct and facilitate community and public education and outreach for residents and businesses to include, but not be limited to, the following to promote and effect natural hazard risk reduction: Provide and maintain links to the HMP website, and regularly post notices on the County/municipal homepage(s) referencing the HMP webpages. Prepare and distribute informational letters to flood vulnerable property owners and neighborhood associations, explaining the availability of mitigation grant funding to	All Hazards	Not applicable – village is already doing this; no original problem	Municipality with support from Planning Partners, NYSOEM, FEMA	Ongoing Capability	Cost	-	1.	Discontinue
						Level of Protection	-	2.	-
						Damages Avoided; Evidence of Success	-	3.	The village performs this activity on an ongoing basis. Therefore, it will not be included as a mitigation action but identified as a capability of the village.

Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps	
								1. Project to be included in 2018 HMP or Discontinue	2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
	mitigate their properties, and instructing them on how they can learn more and implement mitigation. Use email notification systems and newsletters to better educate the public on flood insurance, the availability of mitigation grant funding, and personal natural hazard risk reduction measures. Work with neighborhood associations, civic and business groups to disseminate information on flood insurance and the availability of mitigation grant funding.								
25	Determine if a Community Assistance Visit (CAV) or Community Assistance Contact (CAC) is needed, and schedule if needed.	Flood, Severe Storms	Not applicable – village is already doing this; no original problem	NFIP Floodplain Administrator with support from NYSDEC, NYSOEM, FEMA	Ongoing Capability	Cost	-	1.	Discontinue
						Level of Protection	-	2.	-
						Damages Avoided; Evidence of Success	-	3.	The village performs this activity on an ongoing basis. Therefore, it will not be included as a mitigation action but identified as a capability of the village.
26	Have designated NFIP Floodplain Administrator (FPA) become a Certified Floodplain Manager through the ASFPM and pursue relevant continuing education training such as FEMA Benefit-Cost Analysis.	Flood, Severe Storms	Not applicable – village is already doing this; no original problem	NFIP Floodplain Administrator	Ongoing Capability	Cost	-	1.	Discontinue
						Level of Protection	-	2.	-
						Damages Avoided; Evidence of Success	-	3.	The village performs this activity on an ongoing basis. Therefore, it will not be included as a mitigation action but identified as a capability of the village.
27	Participate in the Community Rating System (CRS) to further manage flood risk and reduce flood insurance premiums for NFIP policyholders. This shall start with the submission to FEMA-DHS of a Letter of Intent to join CRS, followed by the completion and submission of an application to the program once the community's current compliance with the NFIP is	Flood, Severe Storms	Not applicable – village is already doing this; no original problem	NFIP Floodplain Administrator with support from NYSDEC, NYSOEM, FEMA	Ongoing Capability	Cost	-	1.	Discontinue
						Level of Protection	-	2.	-
						Damages Avoided; Evidence of Success	-	3.	The village performs this activity on an ongoing basis. Therefore, it will not be included as a mitigation action but identified as a capability of the village.

Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps	
	established.								
28	Archive elevation certificates	Flood, Severe Storm	Not applicable – village is already doing this; no original problem	NFIP Floodplain Administrator	Ongoing Capability	Cost	-	1.	Discontinue
						Level of Protection	-	2.	-
						Damages Avoided; Evidence of Success	-	3.	The village performs this activity on an ongoing basis. Therefore, it will not be included as a mitigation action but identified as a capability of the village.
29	Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Section 7.0	All Hazards	Not applicable – village is already doing this; no original problem	Municipality (via mitigation planning point of contacts) with support from Planning Partners (through their Points of Contact), NYSOEM	Ongoing Capability	Cost	-	1.	Discontinue
						Level of Protection	-	2.	-
						Damages Avoided; Evidence of Success	-	3.	The village performs this activity on an ongoing basis. Therefore, it will not be included as a mitigation action but identified as a capability of the village.
30	Complete the ongoing updates of the Comprehensive Emergency Management Plans	All Hazards	Not applicable – village is already doing this; no original problem	Municipality with support from NYSOEM	Ongoing Capability	Cost	-	1.	
						Level of Protection	-	2.	
						Damages Avoided; Evidence of Success	-	3.	Use the county's CEMP
31	Create/enhance/ maintain mutual aid agreements with neighboring communities for continuity of operations.	All Hazards	Not applicable – village is already doing this; no original problem	Municipality with support from Surrounding municipalities and County	Ongoing Capability	Cost	-	1.	Discontinue
						Level of Protection	-	2.	-
						Damages Avoided; Evidence of Success	-	3.	The village performs this activity on an ongoing basis. Therefore, it will not be included as a mitigation action but identified as a capability of the village.
32	Identify and develop agreements with entities that can provide support with FEMA/SOEM paperwork after disasters; qualified damage assessment personnel – Improve post-disaster capabilities – damage assessment; FEMA/SOEM paperwork compilation, submissions, record-keeping	All Hazards	Not applicable – village is already doing this; no original problem	Municipality with support from County, NYSOEM, FEMA	Ongoing Capability	Cost	-	1.	Discontinue
						Level of Protection	-	2.	-
						Damages Avoided; Evidence of Success	-	3.	The village performs this activity on an ongoing basis. Therefore, it will not be included as a mitigation action but identified as a capability of the village.
33	Work with regional agencies (i.e. County and SOEM) to help develop damage assessment	All Hazards	Not applicable – village is already doing this; no	Municipality with support from County, NYSOEM	Ongoing Capability	Cost	-	1.	Discontinue
						Level of Protection	-	2.	-



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps	
								1. Project to be included in 2018 HMP or Discontinue	2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate).
	capabilities at the local level through such things as training programs, certification of qualified individuals (e.g. code officials, floodplain managers, engineers).		original problem			Damages Avoided; Evidence of Success	-	3.	The village performs this activity on an ongoing basis. Therefore, it will not be included as a mitigation action but identified as a capability of the village.
34	Participate in local, county and/or state level projects and programs to develop improved structure and facility inventories and hazard datasets to support enhanced risk assessment efforts. Such programs may include developing a detailed inventory of critical facilities based upon FEMA's Comprehensive Data Management System (CDMS) which could be used for various planning and emergency management purposes including: Support the performance of enhanced risk and vulnerability assessments for hazards of concern. Support state, county and local planning efforts including mitigation (including updates to the State HMP), comprehensive emergency management, debris management, and land use. Improved structural and facility inventories could incorporate flood, wind and seismic-specific parameters (e.g. first floor elevations, roof types, structure types based on FEMA-154 "Rapid Visual Screening of Buildings for Potential Seismic Hazards" methodologies). It is recognized that these programs will need to be initiated and	All Hazards	Not applicable – village is already doing this; no original problem	HMP Coordinator	Ongoing Capability	Cost	-	1.	Discontinue
						Level of Protection	-	2.	-
						Damages Avoided; Evidence of Success	-	3.	The village performs this activity on an ongoing basis. Therefore, it will not be included as a mitigation action but identified as a capability of the village.



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is <u>complete</u> )		Next Steps	
								<ol style="list-style-type: none"><li>1. Project to be included in 2018 HMP or Discontinue</li><li>2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate).</li><li>3. If discontinue, explain why.</li></ol>	
	supported at the County and/or State level, and will require training, tools and funding provided at the county, state and/or federal level.								



### Completed Mitigation Initiatives Not Identified in the Previous Mitigation Strategy

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

- The Village mitigated wells 1, 3, and 4 as they are located in the floodplain and exposed to flood damage.
- The Village mitigated Owego Village Wastewater Treatment Plant as it is located in the floodplain and exposed to flood damage.

### Proposed Hazard Mitigation Initiatives for the Plan Update

The Village of Owego participated in a mitigation action workshop on July 11, 2018 and was provided the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 ‘Selecting Appropriate Mitigation Measures for Floodprone Structures’ (March 2007) and FEMA ‘Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards’ (January 2013).

Table 9.11-12 summarizes the comprehensive-range of specific mitigation initiatives the Village of Owego would like to pursue in the future to reduce the effects of hazards. Some of these initiatives may be previous actions carried forward for this plan update. These initiatives are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. Both the four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

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

Table 9.11-13 provides a summary of the prioritization of all proposed mitigation initiatives for the Plan update.

Table 9.11-12. Proposed Hazard Mitigation Initiatives




Project Number	Project Name	Description of the Problem	Description of the Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues?	Estimated Timeline	Lead and Support Agencies	Estimated Cost	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category
V Owego-1	Floodproof basement of the Police Department Headquarters	See Action Worksheet	See Action Worksheet	Flood, Severe Storm	1, 6	Yes 	No	Within 5 years	Village of Owego Police Department, Mayor	High	High	HMGP, FMA, PDM	High	SIP
V Owego-2	Village of Owego Central Fire Station	See Action Worksheet	See Action Worksheet	Flood, Severe Storm	1, 6	Yes 	No	Within 5 years	Village Fire Department	High	High	FEMA SAFER Grant	High	SIP
V. Owego-3	Emergency Weather Alert and Warning System	Inadequate warning of hazard events, including flooding	Together with the Town and Village of Nichols, install a series of emergency weather alert and warning systems. The project includes the purchase and installation of siren/alarm systems for the Town of Nichols, the Village of Nichols, and the Village of Owego. Each siren will have an adequate range to notify all residents of impending storms.	All Hazards	All	No	No	Within 5 Years	Village Board working together with the Town and Village of Nichols	\$150,000	provide all residents, including vulnerable populations, with advance notice of local emergencies	NY Rising, FEMA FMA and HMGP	High	SIP, EAP
V. Owego-4	Critical Facilities – Day Care	Property owner/operator may not know their facility is located in the floodplain and	The Village FPA will notify the owners / operators that their facility is located in the	Flood	1, 2	Yes 	No	One Year	Village Floodplain Administrator and facility owner/operator	<\$5,000	Increase public awareness of floodprone properties; identify	Municipal Budget	Medium	LPR, EAP



Table 9.11-12. Proposed Hazard Mitigation Initiatives


Project Number	Project Name	Description of the Problem	Description of the Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues?	Estimated Timeline	Lead and Support Agencies	Estimated Cost	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category
		the property may be susceptible to flood damage.	floodplain. If the facility is not mitigated, the village will provide mitigation options for the owner / operator to consider.								options to protect facility			
V. Owego-5	DPW and Codes Office Relocation	Village DPW is located in a floodplain and suffered extensive damage during Irene and Lee; facility houses equipment and offices for DPW staff and code enforcement.	Create a new shared services campus located outside of the 100-year floodplain at the Town Hall Campus located at 2354 NY State Route 434, in the Town of Owego. A new 12,000 SF facility will be constructed that will house the Village's highway equipment, DPW and Codes office in one building. The facility will be on the shared services campus with the Town's new DPW building, a	Flood, Severe Storm	All	Yes 	No	2 Years	Village Public Works with support from Village Board and Town of Owego	\$2.5 million	Reduces flood risk to municipal operations, provide savings to village by avoiding flood damage during future storms	NY Rising, FEMA HMGP and FMA, EDA Public Works	High	SIP

Table 9.11-12. Proposed Hazard Mitigation Initiatives





Project Number	Project Name	Description of the Problem	Description of the Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues?	Estimated Timeline	Lead and Support Agencies	Estimated Cost	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category
			similar structure designed to house the Town highway equipment.											
V. Owego-6	Critical Facilities – Medical Facilities	There are two medical facilities located in the village - Lourdes Owego Family Practice and UHS Primary Care Owego. Both are located in the floodplain and may be exposed to flood damage by future events. The Village does not have jurisdiction over these facilities and cannot mitigate themselves.	The Village FPA will notify the owners / operators that their facility is located in the floodplain. If the facility is not mitigated, the village will provide mitigation options for the owner / operator to consider.	Flood	1, 2	Yes 	No	One Year	Village Floodplain Administrator and facility owner/operator	<\$5,000	Increase public awareness of floodprone properties; identify options to protect facility	Municipal Budget	Medium	LPR, EAP
V. Owego-7	Critical Facilities – Water Pumps	The water pumps located in the village (1, 2, 3, and 5) are owned and operated by SUEZ; the village does not have jurisdiction over them.	The Village FPA will notify the owners / operators that their facility is located in the floodplain. If the facility is not mitigated, the village will provide	Flood	1, 2	Yes 	No	One Year	Village Floodplain Administrator and facility owner/operator	<\$5,000	Increase public awareness of floodprone properties; identify options to protect facility	Municipal Budget	Medium	LPR, EAP

Table 9.11-12. Proposed Hazard Mitigation Initiatives

Project Number	Project Name	Description of the Problem	Description of the Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues?	Estimated Timeline	Lead and Support Agencies	Estimated Cost	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category
		The pumps are located in the floodplain and may be exposed to flood damage by future events.	mitigation options for the owner / operator to consider.											
V. Owego-8	Critical Facilities – Schools	There are several schools located in the village that are found to be in the floodplain and may be exposed to flood damage from future storm events. The village does not have jurisdiction over these facilities.	The Village FPA will notify the owners / operators that their facility is located in the floodplain. If the facility is not mitigated, the village will provide mitigation options for the owner / operator to consider.	Flood	1, 2	Yes 	No	One Year	Village Floodplain Administrator and facility owner/operator	<\$5,000	Increase public awareness of floodprone properties; identify options to protect facility	Municipal Budget	Medium	LPR, EAP
V. Owego-9	Critical Facilities – Wastewater Pump Stations 1, 2, 3, and 4	The four wastewater pump stations in the village are located in the floodplain and may be exposed to flood damage from future storm events.	The Village FPA will notify the owners / operators that their facility is located in the floodplain. If the facility is not mitigated, the village will provide mitigation options for the owner / operator to consider.	Flood	1, 2	Yes 	No	One Year	Village Floodplain Administrator and facility owner/operator	<\$5,000	Increase public awareness of floodprone properties; identify options to protect facility	Municipal Budget	Medium	LPR, EAP
V. Owego-	Public Outreach Regarding	The Village currently does	Project components	All	All	No	No	18 Months	Village Board	\$125,000	Reduce loss of property,	NY Rising	High	EAP

**Table 9.11-12. Proposed Hazard Mitigation Initiatives**

Project Number	Project Name	Description of the Problem	Description of the Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues?	Estimated Timeline	Lead and Support Agencies	Estimated Cost	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category
10	Natural Hazards	not have any education or outreach programs. Residents are unaware of where to go in an emergency and some do not know what to do in the event of an evacuation. This can impact the life and safety of residents and village staff.	include: increasing voluntary enrollment in the Tioga County Hyper reach and NYS Alerts programs, establishing a Block Emergency Preparedness Program, creating a flood safety awareness brochure, conducting emergency testing/flood drills, developing a comprehensive information system to raise awareness of flood hazards and creating a pet evacuation plan.								increase awareness of residents, protect life and safety			
V. Owego-11 (NYR Project)	Stormwater Management Plan and Improvements	As a result of flooding associated with Hurricane Irene and Tropical Storm Lee, approximately 85% of the buildings in the Village of	Develop a Comprehensive Stormwater Management Plan and construct stormwater improvements in the Village of Owego.	Severe Storm, Flood	1, 2	No	No	2.5 years	Village Public Works with support from Tioga County	\$500,000	This project has the potential to reduce the extent and severity of localized flash flooding within the Village of	NY Rising, Municipal Budget	High	LPR, SIP


**Table 9.11-12. Proposed Hazard Mitigation Initiatives**

Project Number	Project Name	Description of the Problem	Description of the Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues?	Estimated Timeline	Lead and Support Agencies	Estimated Cost	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category
		Owego were under water. System was damaged by flood waters, impacting the health and safety of village residents.									Owego. The identification and execution of priority improvement projects would reduce the risk to the stormwater drainage system and adjacent property due to erosion and flooding.			
V. Owego-12 (NYR Project)	Regional Incubator Node	It is estimated that rising waters from the Susquehanna River and Huntington and Owego Creeks flooded approximately 85% of the Village of Owego. The community's historic commercial district (commonly known as the Historic Owego Marketplace) is located along the banks of the	Regional Incubator Node, Village of Owego. Partner with Binghamton University, Cornell, and Corning Inc. to establish a regional incubator node in the Village of Owego, which will encourage future economic growth and allow entrepreneurs to thrive in the post storm economy.	Severe Storm, Flood		No	No	2 years	Village Board with support from Binghamton University, Cornell, and Corning Inc.	\$350,000	Create jobs; increase small business activity	NY Rising, Village Budget, University Budget	High	SIP

Table 9.11-12. Proposed Hazard Mitigation Initiatives

Project Number	Project Name	Description of the Problem	Description of the Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues?	Estimated Timeline	Lead and Support Agencies	Estimated Cost	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category
		Susquehanna, and was one of the areas hardest hit by the flood waters associated with Tropical Storm Lee.												
V. Owego-13 (NYR Project)	Emergency Preparedness and Notification Plan	Village residents stated that when Tropical Storm Lee hit they didn't have advance warning, were unaware of where to go in an emergency, and some reported that they didn't know what to do with their pets during an evacuation.	Implement an Emergency Preparedness and Notification Plan in the Village of Owego to increase voluntary enrollment in the County's Hyper-reach and NYS Alerts programs, establish a Block Emergency Preparedness Program, conduct emergency testing/flood drills, develop a Comprehensive Information System to raise awareness of flood hazards, and create a Pet Evacuation Plan System	All	All	No	No	1.5 years	Village Board	\$125,000	Reduce loss of property; increase awareness of weather events; reduce loss of life or injuries	NY Rising, FEMA PDM, Village Budget	High	LPR

**Table 9.11-12. Proposed Hazard Mitigation Initiatives**

Project Number	Project Name	Description of the Problem	Description of the Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues?	Estimated Timeline	Lead and Support Agencies	Estimated Cost	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category
V. Owego-14 (NYR Project)	Resiliency Tools Update	Current zoning ordinance is inconsistent and contains outdated definitions; current site plan review does not review flood-related information; it is unknown if the special permit review article is compliant with the flood damage prevention local law	Update the Village's resiliency tools, including site plan review, zoning, and CRS ratings, to lessen the impact of storms on homes, businesses and key assets during future flood	All	All	No	No	1.5 years	Village Board, Code Enforcement	\$225,000	Ensures flood-safe future development in the village; strengthens the flood damage prevention local law; avoid potential damages to homes and businesses from floods	NY Rising, Village Budget	High	LPR
V. Owego-15	Critical Facilities – Fire Stations	Owego Fire Stations #2 and #3 are located in the 100-year floodplain and vulnerable to flood damages.	The village will contact the facilities owners to discuss options for protecting the facilities to the 500-year flood event.	Flood	1	Yes 	No	Within 1 year	Floodplain Administrator	Staff Time	Provide outreach to the property owner and informing them of potential flood damage and possible solutions	Municipal Budget	Medium	EAP

*Notes:*

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

**Acronyms and Abbreviations:**

CAV      Community Assistance Visit  
CRS      Community Rating System

**Potential FEMA HMA Funding Sources:**

FMA      Flood Mitigation Assistance Grant Program  
HMGP    Hazard Mitigation Grant Program

**Timeline:**

*The time required to complete the project*

**Cost:**



DPW Department of Public Works  
FEMA Federal Emergency Management Agency  
FPA Floodplain Administrator  
HMA Hazard Mitigation Assistance  
N/A Not applicable  
NFIP National Flood Insurance Program  
OEM Office of Emergency Management

PDM Pre-Disaster Mitigation Grant Program

Estimated costs associated with implementation

Benefits:

The benefits that implementation of this project will provide.

Mitigation Category:

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

Critical Facility:

- Yes 💧 - Critical Facility located in 1% floodplain





Table 9.11-13. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
V Owego-1	Floodproof basement of the Police Department Headquarters	1	1	1	1	1	1	1	0	1	1	0	1	1	0	11	High
V Owego-2	Village of Owego Central Fire Station	1	1	1	1	1	1	1	0	1	1	0	1	1	0	11	High
V. Owego-3	Emergency Weather Alert and Warning System	1	1	1	1	1	0	1	1	1	1	1	1	1	0	12	High
V. Owego-4	Critical Facilities – Day Care	1	1	1	1	0	0	1	0	1	1	0	1	0	0	8	Medium
V. Owego-5	DPW and Codes Office Relocation	1	1	1	1	1	0	1	1	1	1	1	1	1	0	12	High
V. Owego-6	Critical Facilities – Medical Facilities	1	1	1	1	0	0	1	0	1	1	0	1	0	0	8	Medium
V. Owego-7	Critical Facilities – Water Pumps	1	1	1	1	0	0	1	0	1	1	0	1	0	0	8	Medium
V. Owego-8	Critical Facilities – Schools	1	1	1	1	0	0	1	0	1	1	0	1	0	0	8	Medium
V. Owego-9	Critical Facilities – Wastewater Pump Stations 1, 2, 3, and 4	1	1	1	1	0	0	1	0	1	1	0	1	0	0	8	Medium
V. Owego-10	Public Outreach Regarding Natural Hazards	1	1	1	1	1	0	0	0	1	1	1	1	1	0	10	High
V. Owego-11 (NYR Project)	Stormwater Management Plan and Improvements	1	1	1	1	1	0	0	1	1	0	1	1	0	0	9	High
V. Owego-12 (NYR Project)	Regional Incubator Node	1	1	1	1	0	0	0	1	1	1	1	1	1	1	11	High
V. Owego-13 (NYR Project)	Emergency Preparedness and Notification Plan	1	1	1	1	1	1	0	0	1	1	1	1	1	0	11	High
V. Owego-14 (NYR Project)	Resiliency Tools Update	1	1	1	1	1	0	1	1	1	1	1	1	1	0	12	High
V. Owego-15	Critical Facilities – Fire Stations	0	1	0	1	1	0	1	1	1	0	0	0	1	1	8	Medium

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





### **9.11.7 Future Needs to Better Understand Risk/Vulnerability**

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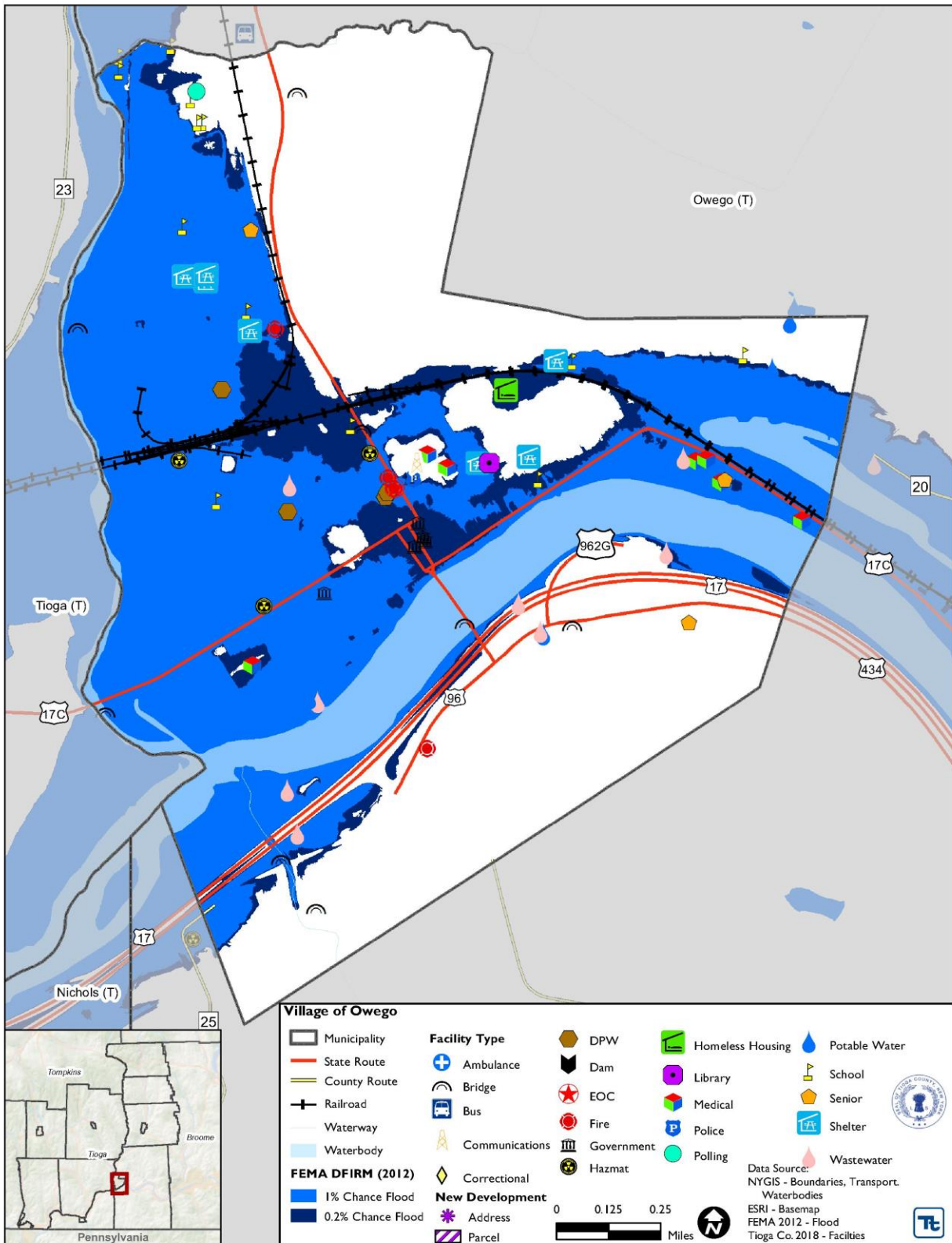
None at this time.

### **9.11.8 Hazard Area Extent and Location**

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Hazard area extent and location maps have been generated for the Village of Owego that illustrate the probable areas impacted within the municipality. These maps are based on the best available data at the time of the preparation of this plan and are considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the Village of Owego has significant exposure. These maps are illustrated in the hazard profiles within Section 5.4, Volume I of this Plan.

Figure 9.11-1. Village of Owego Hazard Area Extent and Location





Village of Owego Action Worksheet			
<b>Project Name:</b>	Floodproof basement of the Police Department Headquarters		
<b>Project Number:</b>	V. Owego-1		
Risk / Vulnerability			
<b>Hazard(s) of Concern:</b>	Flood		
<b>Description of the Problem:</b>	The Police Department is in the floodplain at 90 Temple Street, just blocks from where Owego Creek meets the Susquehanna River and two blocks from the river itself. The basement floods during periods when the Susquehanna River overflows, and also during other times from feeder creek ground seepage. The structure was isolated in 2011 during floods created by Hurricane Irene, when the downtown area was inundated. All roads coming into and leaving the village were flooded. Equipment and utilities housed in the basement were destroyed.		
Action or Project Intended for Implementation			
<b>Description of the Solution:</b>	The most feasible solution is to harden the basement to avoid future flooding. The first phase of the project would include conducting an engineering study to identify the amount of water entering the structure and the best ways to address same. The project would include elevating utilities and identifying ways to safely store items there or elsewhere.		
<b>Is this project related to a Critical Facility?</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
<b>Is this project related to a Critical Facility located within the 100-year floodplain?</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
<b>Level of Protection:</b>	500-year	<b>Estimated Benefits (losses avoided):</b>	Maintain the structural integrity of the building. Maintain a "healthy" building so mold and mildew do not accumulate and keep staff and visitors safe.
<b>Useful Life:</b>	50 years		
<b>Estimated Cost:</b>	\$500,000		
Plan for Implementation			
<b>Prioritization:</b>	High	<b>Desired Timeframe for Implementation:</b>	6 months (Fall 2018)
<b>Estimated Time Required for Project Implementation:</b>	5 years	<b>Potential Funding Sources:</b>	HMGP, FMA, PDM
<b>Responsible Organization:</b>	Village of Owego Police Department, Mayor	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	Police Department Operations Plan, County Emergency Management plan
Three Alternatives Considered (including No Action)			
<b>Alternatives:</b>	<b>Action</b>	<b>Estimated Cost</b>	<b>Evaluation</b>
	No Action	\$0	Problem will continue and possibly worsen.
	Move the station elsewhere on the north side of the river possibly combining with DPW.	\$1 million	No location in the village on the north side of the river (near highest concentration of residents) that is completely out of the floodplain.
	Move the station to the south side of the river, where ground is higher overall.	\$1 million	It would be hard to respond to incidents on the north side of the river in the event of a disaster. This location would be some distance from downtown, where most incidents occur.
Progress Report (for plan maintenance)			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			



Village of Owego Action Worksheet		
<b>Project Name:</b>	Floodproof basement of the Police Department Headquarters	
<b>Project Number:</b>	V. Owego-1	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project can reduce flood danger to individuals within the facility
Property Protection	1	Structure hardening can protect critical emergency service
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	Properties located within the Village of Owego
Fiscal	1	FEMA HMGP, FMA, PDM
Environmental	0	
Social	1	Will allow for continuity of operations for emergency services
Administrative	1	Town of Owego PD and Mayor to work on project
Multi-Hazard	0	
Timeline	1	Project can be completed within 6 Months
Agency Champion	1	
Other Community Objectives	0	
<b>Total</b>	11	
<b>Priority (High/Med/Low)</b>	High	



Village of Owego Action Worksheet			
<b>Project Name:</b>	Village of Owego Central Fire Station		
<b>Project Number:</b>	V. Owego-2		
Risk / Vulnerability			
<b>Hazard(s) of Concern:</b>	Flood		
<b>Description of the Problem:</b>	The historic building, located at 87 North Avenue, houses the department's communications equipment on the second floor. The equipment and the communications center are vital to successful emergency operations, including response and recovery, in the event of a disaster. The station is precarious given its location ½ mile from the confluence of Owego Creek and the Susquehanna River, which regularly overflows its banks. Nearby Station #2 is also located in the SFHA, where it should not have been built.		
Action or Project Intended for Implementation			
<b>Description of the Solution:</b>	For everyday purposes, equipment and operations can remain in place with the addition of floodproof doors to protect the structure. Build flood doors to contain water intrusion. No other fire station outside the floodplain. 2 cannot accommodate more equipment. Floodproof exterior wall that's compatible with historic preservation standards.		
<b>Is this project related to a Critical Facility?</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
<b>Is this project related to a Critical Facility located within the 100-year floodplain?</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
<b>Level of Protection:</b>	500-year	<b>Estimated Benefits (losses avoided):</b>	Protect the communications center and those manning the center during disaster response. Preserve a historic structure.
<b>Useful Life:</b>	50 years		
<b>Estimated Cost:</b>	\$250,000		
Plan for Implementation			
<b>Prioritization:</b>	High	<b>Desired Timeframe for Implementation:</b>	1 year
<b>Estimated Time Required for Project Implementation:</b>	5 years	<b>Potential Funding Sources:</b>	FEMA SAFER Grant
<b>Responsible Organization:</b>	Village of Owego Police Department, Mayor	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	Emergency Operations Plan, Hazard Mitigation Plan, Village Comp Plan
Three Alternatives Considered (including No Action)			
<b>Alternatives:</b>	<b>Action</b>	<b>Estimated Cost</b>	<b>Evaluation</b>
	No Action	\$0	Potential for valuable equipment to be destroyed and out of commission during disaster response/recovery.
	Move equipment to higher ground on the same side of the river.	\$300,000	The entire northern end of the village is located in the SFHA. Even a reasonably-priced project would keep resources in harm's way.
	Eliminate this location as a fire station by moving assets to nearby Station #2.	\$50,000	Station #2 is also located in the SFHA. Assets would remain in harm's way.
Progress Report (for plan maintenance)			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			



Village of Owego Action Worksheet		
<b>Project Name:</b>	Village of Owego Central Fire Station	
<b>Project Number:</b>	V. Owego-2	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project can reduce flood danger to individuals within the facility
Property Protection	1	Structure hardening can protect critical emergency service
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	Property located within the Village of Owego
Fiscal	1	FEMA SAFER Grant
Environmental	0	
Social	1	Will allow for continuity of operations for emergency services
Administrative	1	Village of Owego Fire Department
Multi-Hazard	0	
Timeline	1	Project can be completed within 1 Year
Agency Champion	1	
Other Community Objectives	0	
Total	11	
Priority (High/Med/Low)	High	



## 9.12 TOWN OF RICHFORD

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



2010 Population: 1,172  
Population in 100 year Floodplain (SFHA): 79

Land Area: 24,205.9 acres  
Land Area in Floodplain: 3.2%  
NFIP policies: 2  
NFIP Policies in SFHA: 1  
NFIP Claims: 4  
Total NFIP Losses: \$1,731



Number of Buildings: 582  
Total Replacement Building Value: \$133.3 million  
Number of Buildings in the SFHA: 25  
Total Replacement Building Value Exposed in the SFHA: \$4.3 million

Mitigation Focus  
Multi-Hazard



### 9.12.1 Hazard Mitigation Plan Point of Contact

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

Primary Point of Contact	Alternate Point of Contact
<p>Charlie Davis, Supervisor Phone: 607-657-8090 Cell: 607-229-5118 Address: 21 Ironwood Place, Richford, NY 13835 Email: <a href="mailto:cdavis@richfordny.com">cdavis@richfordny.com</a></p>	<p>William Stell Phone: 856-689-3573 Address: 489 Matson Rd, Richford, NY 13835 Email: <a href="mailto:Dad.stell@gmail.com">Dad.stell@gmail.com</a></p>

## 9.12.2 Municipal Profile

The Town of Richford is in the Tioga County, New York. The town is the most northerly town of the county and is southeast of Ithaca, New York. According to the U.S. Census Bureau, the town has a total area of 38.2 square miles (99 km<sup>2</sup>), of which, 38.2 square miles (99 km<sup>2</sup>) of it is land and 0.04 square miles (0.10 km<sup>2</sup>) of it (0.05%) is water.

The West Branch of the Owego Creek forms the western border of the town while the East Branch runs along the eastern edge of the village itself at the base of Geer Hill. Several spring-fed ponds exist on the hilltops, especially at Clarks. A large portion of the town is hills with many of the highest elevations (+1,400 ft.) in the county. The highest elevation (1,994 ft.) in Tioga County is within the town, an unnamed hill just to the north of the intersection of Creamery Rd and Robinson Hollow Rd in Robinson Hollow State Forest.

The western border is with Tompkins County, the north border is Cortland County, the east border is Broome County, and Berkshire lies to the south. New York State Route 38 (north-south) intersects New York State Route 79 (east-west) at Richford village.

The town is governed by the town supervisor and four council members. According to the 2010 Census, the community's population was 1,172.

## Growth/Development Trends

The following table summarizes recent residential/commercial development since 2012 to present and any known or anticipated major residential/commercial development and major infrastructure development that has been identified in the next five years within the municipality. Refer to the map in 9.12.8 of this annex which illustrates the hazard areas along with the location of potential new development.

**Table 9.12-1. Growth and Development**

Property or Development Name	Type (e.g. Res., Comm.)	# of Units / Structures	Location (address and/or Parcel ID)	Known Hazard Zone(s)	Description/Status of Development
<b>Recent Development from 2012 to present</b>					
None					
<b>Known or Anticipated Development in the Next Five (5) Years</b>					
Parker Building	Comm. Municipal	Old Warehouse	13 Town Barn Road	1% Annual Chance Flood Event	Town Hall office space and Highway Department work and storage space.
Rawley Park	Municipal	Walking/Bike Path	13338 State Road 38	No	Paved walking/bike path

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

## 9.12.3 Natural Hazard Event History Specific to the Municipality

Tioga County has a history of natural and non-natural hazard events as detailed in Volume I, Section 5.0 of this plan. A summary of historical events is provided in each of the hazard profiles and includes a chronology of events that have affected the County and its municipalities. For the purpose of this plan update, events that have occurred in the County from 2012 to December 31, 2017 were summarized to indicate the range and impact of hazard events in the community. Information regarding specific damages is included, if available, based on reference material or local sources. This information is presented in the table below. For details of these and additional events, refer to Volume I, Section 5.0 of this plan.

Table 9.12-2. Hazard Event History

Dates of Event	Event Type (Disaster Declaration if applicable)	Tioga County Designated?	Summary of Damages/Losses
7/14/17	N/A	N/A	Rapid rises of area streams and creeks resulted in flash flooding for the northeast portion of Richford and flooding at Rawley Park.

Notes:

EM Emergency Declaration (FEMA)

FEMA Federal Emergency Management Agency

DR Major Disaster Declaration (FEMA)

N/A Not applicable

### 9.12.4 Hazard Vulnerabilities and Ranking

The hazard profiles in Section 5.0 of this plan have detailed information regarding each plan participant's vulnerability to the identified hazards. This section provides a summary of exposure and impacts from significant hazards of concern as identified by the Town of Richford. For additional vulnerability information relevant to this jurisdiction, refer to Section 5.0.

#### Natural Hazard Risk/Vulnerability Risk Ranking

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

As discussed in Section 5.3 (Hazard Ranking), each participating town or village may have differing degrees of risk exposure and vulnerability compared to Tioga County as a whole. Therefore, each municipality ranked the degree of risk to each hazard as it pertains to their community. The table below summarizes the hazard risk/vulnerability rankings of potential natural hazards for the Town of Richford. The Town has reviewed the hazard risk/vulnerability risk ranking table and has made adjustments as necessary. The Town felt that the overall ranking for flood should be changed from high to medium as they have very few residents living in the floodplain and along the creek. The Town is not very prone to flood damage and a majority of the floodplain is undeveloped.

Table 9.12-3. Hazard Risk/Vulnerability Risk Ranking

Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard <sup>a, b, c</sup>		Probability of Occurrence	Hazard Ranking
Drought	Damage estimate not available		Frequent	Medium
Flood	RCV Exposed to 1% Annual Chance Flood Event	\$425,153,000	Frequent	Medium*
Severe Storm	100-year MRP	\$0	Frequent	High
	500-year MRP	\$9,709		
Severe Winter Weather	1% GBS	\$809,570	Frequent	High
	5% GBS	\$4,047,850		

Notes:

\* Municipality adjusted the hazard ranking

a. Building damage ratio estimates based on FEMA 386-2 (August 2001)

- b. Loss estimates for the severe storm and severe winter storm hazards are structural values only and do not include the value of contents.
- c. Loss estimates for the flood hazard represents both structure and contents.

### National Flood Insurance Program (NFIP) Summary

The following table summarizes the NFIP statistics for the Town of Richford.

**Table 9.12-4. NFIP Summary**

Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 100-year Boundary (3)
Richford (T)	2	4	\$1,731.00	0	0	1

Source: FEMA 2018

1. Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA and are current as of February 28, 2018 and are summarized by Community Name. Please note the total number of repetitive loss properties excludes the severe repetitive loss properties. The number of claims represents claims closed by 2/28/2018. Total building and content losses from the claims file provided by FEMA Region 2.
2. Total building and content losses from the claims file provided by FEMA Region 2.

### Critical Facilities at Risk to Flooding

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

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

**Table 9.12-5. Potential Flood Losses to Critical Facilities**

Name	Type	Exposure		Potential Loss from 1% Flood Event		Addressed by Proposed Action
		1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	
Richford Highway Garage	Government	X	X	-	-	T. Richford-3

Source: Tioga County GIS, FEMA 2012, and Hazus 4.2

### Identified Issues

The municipality has identified the following vulnerabilities within their community:

- Rising water flooding along both the Owego Creek and the West Branch of the Owego Creek. Flooding has resulted in minor damage to structures in the past. There is minimal development within the floodplain throughout the Town.
- Between Owego Creek and West Branch – less than 20 houses would be impacted by any extreme flooding
- While flooding has occurred, winter storms create more problems for the Town.

### 9.12.5 Capability Assessment

This section identifies the following capabilities of the local jurisdiction:

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

#### Planning and Regulatory Capability

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

**Table 9.12-6. Planning and Regulatory Tools**

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
<b>Planning Capability</b>				
Master Plan	Yes	Local	Planning Board	Master Plan updated in 2015
Capital Improvements Plan	No	-	-	-
Floodplain Management / Basin Plan	No	-	-	-
Stormwater Management Plan	No	-	-	-
Open Space Plan	No	-	-	-
Stream Corridor Management Plan	No	-	-	-
Watershed Management or Protection Plan	No	-	-	-
Economic Development Plan	No	-	-	-
Comprehensive Emergency Management Plan	No	-	-	-
Emergency Operation Plan	No	-	-	-
Post-Disaster Recovery Plan	No	-	-	-
Transportation Plan	No	-	-	-
Strategic Recovery Planning Report	No	-	-	-
Other Plans:	-	-	-	-
<b>Regulatory Capability</b>				
Building Code	Yes	State & Local	Planning Board and Code Enforcement	Building Code of New York State
Zoning Ordinance	No	-	-	-
Subdivision Ordinance	Yes	Local	Planning Board	2003/Currently under review

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
NFIP Flood Damage Prevention Ordinance	Yes	Federal, State, Local	Supervisor	Local Law Number 1 of 2012
NFIP: Cumulative Substantial Damages	No	-	-	-
NFIP: Freeboard	Yes	State, Local	Supervisor	State mandated BFE+2, both residential and non-residential
Growth Management Ordinances	No	-	-	-
Site Plan Review Requirements	Yes	Local	Planning Board and Code Enforcement	Local Law Number 1 of 2004
Stormwater Management Ordinance	No	-	-	-
Municipal Separate Storm Sewer System (MS4)	No	-	-	-
Natural Hazard Ordinance	No	-	-	-
Post-Disaster Recovery Ordinance	No	-	-	-
Real Estate Disclosure Requirement	Yes	State	-	NYS mandate, Property Condition Disclosure Act, NY Code - Article 14 §460-467
Other (Special Purpose Ordinances [i.e., sensitive areas, steep slope])	N/A	-	-	-

### Administrative and Technical Capability

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

**Table 9.12-7. Administrative and Technical Capabilities**

Resources	Is this in place? (Yes or No)	Department/ Agency/Position
<b>Administrative Capability</b>		
Planning Board	Yes	Town of Richford Planning Board (local)
Mitigation Planning Committee	No	-
Environmental Board/Commission	No	-
Open Space Board/Committee	No	-
Economic Development Commission/Committee	No	-
Maintenance Programs to Reduce Risk	No	-
Mutual Aid Agreements	Yes	Fire Department and Ambulance Service
<b>Technical/Staffing Capability</b>		
Planner(s) or engineer(s) with knowledge of land development and land management practices	No	County Planning and Engineering
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	No	County Support

Resources	Is this in place? (Yes or No)	Department/ Agency/Position
Planners or engineers with an understanding of natural hazards	No	Code Enforcement Officer
NFIP Floodplain Administrator (FPA)	Yes	Code Enforcement Officer
Surveyor(s)	No	-
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	No	County Support
Scientist familiar with natural hazards	No	-
Emergency Manager	No	Local Fire Chief and County Support
Grant writer(s)	No	Help with County Planning Staff
Staff with expertise or training in benefit/cost analysis	No	-
Professionals trained in conducting damage assessments	No	-

### Fiscal Capability

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

**Table 9.12-8. Fiscal Capabilities**

Financial Resources	Accessible or Eligible to Use (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	Yes
Capital improvements project funding	Yes
Authority to levy taxes for specific purposes	Yes
User fees for water, sewer, gas or electric service	No
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	Yes
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	No
Other federal or state Funding Programs	HMGP & PDM Yes
Open Space Acquisition funding programs	No
Other	No

### Community Classifications

The table below summarizes classifications for community program available to the Town of Richford.

**Table 9.12-9. Community Classifications**

Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	4/4	2017



Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Public Protection (ISO Fire Protection Classes 1 to 10)	No	-	-
NYSDEC Climate Smart Community	No	-	-
Storm Ready Certification	Yes	County	-
Firewise Communities classification	No	-	-
Natural disaster/safety programs in/for schools	No		
Organizations with mitigation focus (advocacy group, non-government)	Yes	-	Tioga County Soil & Water
Public education program/outreach (through website, social media)	No	-	-
Public-private partnership initiatives addressing disaster-related issues	No	-	-

Note:

N/A Not applicable  
NP Not participating  
- Unavailable

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

Criteria for classification credits are outlined in the following documents:

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

### Self-Assessment of Capability

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



Table 9.12-10. Self-Assessment Capability for the Municipality

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

### National Flood Insurance Program

#### NFIP Floodplain Administrator (FPA)

Charles Davis, Supervisor

#### Flood Vulnerability Summary

The Town does not maintain lists/inventories of properties that have been flood damaged or identify property owners who are interested in mitigation. The Town has a history of minor rising water flooding along both the Owego Creek and West Branch of the Owego Creek, with minor damage to structures. The Town does not make substantial damage estimates and has not had any property owners interested in mitigation.

#### Resources

The FPA is the sole person responsible for floodplain administration. NFIP administration services and functions offered by the Town includes reviews of all building permit applications by Code Enforcement to ensure that the floodplain is not encroached upon. The Town does not provide any education or outreach to the community regarding flood hazards/risk and flood risk reduction. The FPA stated that there are no barriers to running an effective floodplain management program but does not feel adequately supported and trained to fulfill their responsibilities as the municipal floodplain administrator. The FPA would consider attending continuing education and/or certification training on floodplain management if it were offered in the County for all local floodplain administrators.

#### Compliance History

The Town is in good-standing in the NFIP. The most recent compliance audit [e.g. Community Assistance Visit (CAV)] was in 2016.

#### Regulatory

The Town's floodplain management regulations/ordinances meet the FEMA and State minimum requirements. Site Plan Review and Sub Division Laws support floodplain management and the meeting of NFIP requirements. The Town has not considered joining the Community Rating Systems (CRS) program.

### Integration of Hazard Mitigation into Existing and Future Planning Mechanisms



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

### Planning

**Master Plan:** The Town's Master Plan was last updated in 2016. The Plan includes areas of natural hazard risk and refers to the Countywide Hazard Mitigation Plan.

**Stormwater Management Plan:** The Town of Richford is an MS4 regulated community and has a formal Stormwater Management Plan. The Plan specifies projects/actions/initiatives to reduce the volume of stormwater or otherwise mitigate stormwater flooding.

### Sheltering, Evacuation, and Temporary Housing

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

Tioga County, through a buildable land analysis, has identified areas suitable for placing temporary and permanent housing. Refer to Section 4.7.5 in Section 4 (County Profile) of Volume 1 of this plan for a description of resources identified by the county to support municipalities with the identification of evacuation, sheltering, and temporary and permanent housing. Each year, during the annual HMP progress meeting, the municipality will discuss their progress in identifying shelters, evacuation routes, and temporary and permanent housing for their community.

### Temporary and Long-Term Housing

The Town of Richford identified Broome Tioga Sports Center at Shafer Road as temporary housing for residents displaced by disaster. The Sports Center would need additional electric, water, and sewage hook-ups in order to be compliant with building codes. The Town has not identified any potential sites suitable for relocating houses of the floodplain and/or building new homes once properties in the floodplain are acquired.

### Evacuation and Sheltering Needs

The Town of Richford has identified Richford Town Hall, Richford Fire Station, and Berkshire Fire Station as designated emergency shelters. Richford Town Hall is located at 7 Bowery Lane, has a capacity of 20, and is next door to a medical clinic. Richford Fire Station is located at 14 Bowery Lane, has a capacity of 5, has backup power, and has several trained EMT's. Berkshire Fire Station is located at 12515 State Route 38 in Berkshire. The Fire Station has a capacity of 25, is ADA compliant, has backup power, and has several trained EMTs. In 2019, the Town will be constructing a new fire station/public safety building at 10 Bowery Lane. This facility is proposed to be used as a shelter once constructed.

The Town of Richford is located in a narrow valley near the headwaters of two creeks (the West Branch of the Owego Creek and the Owego Creek) with two State Highways (NY State Route 38 and NY State Route 79). NY State Route 79 provides evacuation to higher elevations during flooding. As a small community, no major traffic issues are anticipated during any evacuations.



### 9.12.6 Mitigation Strategy and Prioritization

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

#### Past Mitigation Initiative Status

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

Table 9.12-11. Status of Previous Mitigation Actions

Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
						Cost		
1	Liddington Road (a town Road off of Harford Road)- Replace the drainpipe currently located on Liddington Rd. with a larger drainpipe. This will allow for a greater capacity for stream flow and will reduce the chance of flooding of the road and washing out of the roadbed which would require additional loads of gravel to be hauled in to rebuild the roadbed. This would also reduce the risk to adjacent property owners of flooding of their property.	Flood		Town of Richford Highway with support by Richford Town Board, County DPW	Complete	Cost	\$40,000 (town funds)	1. Discontinue
						Level of Protection	25-year	2. -
						Damages Avoided; Evidence of Success	Protection of stream banks from erosion and prevention of damage to both the drainpipe and the road	3. Project has been completed
2	Richford, Berkshire and Newark Valley-Develop an emergency response plan for northern Tioga County to include Richford, Berkshire and Newark Valley to better coordinate responses to future storms.	All Hazards		Town of Richford with support from EMO	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. While there is no set plan or MUA, the towns work well together during emergencies. Will continue doing so in the future.
3	Retrofit structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority. Address Richford Town Hall and Richford Fire Station.  Phase 1: Identify appropriate candidates for retrofitting based on cost-	Flood, Severe Storm, Earthquake		Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. The town performs this activity on an ongoing basis. Therefore, it will not be included as a mitigation action but identified as a capability of the town.

Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
	effectiveness versus relocation.  Phase 2: Where retrofitting is determined to be a viable option, work with property owners toward implementation of that action based on available funding from FEMA and local match availability.							
4	Purchase, or relocate structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority. Phase 1: Identify appropriate candidates for relocation based on cost-effectiveness versus retrofitting. Phase 2: Where relocation is determined to be a viable option, work with property owners toward implementation of that action based on available funding from FEMA and local match availability.	Flood, Severe Storm		Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. The town performs this activity on an ongoing basis. Therefore, it will not be included as a mitigation action but identified as a capability of the town.
5	Maintain compliance with and good-standing in the NFIP including adoption and enforcement of floodplain management requirements (e.g. regulating all new and substantially improved construction in Special Hazard Flood Areas),	Flood, Severe Storms		Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, ISO FEMA	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. The town performs this activity on an ongoing basis. Therefore, it will not be included as a mitigation action but identified as a capability of the town.



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
	floodplain identification and mapping, and flood insurance outreach to the community. Further, continue to meet and/or exceed the minimum NFIP standards and criteria through the following NFIP-related continued compliance actions identified as Initiatives 6 – 15 (below).							
6	Begin the process to adopt higher regulatory standards to manage flood risk (i.e. increased freeboard, cumulative substantial damage/improvements).	Flood, Severe Storms		Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	Ongoing Capability	Cost	-	1. Discontinue 2. - 3. The town performs this activity on an ongoing basis. Therefore, it will not be included as a mitigation action but identified as a capability of the town.
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
7	Conduct and facilitate community and public education and outreach for residents and businesses to include, but not be limited to, the following to promote and effect natural hazard risk reduction: Provide and maintain links to the HMP website, and regularly post notices on the County/municipal homepage(s) referencing the HMP webpages. Prepare and distribute informational letters to flood vulnerable property owners and neighborhood associations, explaining the availability of mitigation grant funding to mitigate	All Hazards		Municipality with support from Planning Partners, NYSOEM, FEMA	Ongoing Capability	Cost	-	1. Discontinue 2. - 3. The town performs this activity on an ongoing basis. Therefore, it will not be included as a mitigation action but identified as a capability of the town.
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
	their properties, and instructing them on how they can learn more and implement mitigation. Use email notification systems and newsletters to better educate the public on flood insurance, the availability of mitigation grant funding, and personal natural hazard risk reduction measures. Work with neighborhood associations, civic and business groups to disseminate information on flood insurance and the availability of mitigation grant funding.							
8	Have designated NFIP Floodplain Administrator (FPA) become a Certified Floodplain Manager through the ASFP, and pursue relevant continuing education training such as FEMA Benefit-Cost Analysis.	Flood, Severe Storms		NFIP Floodplain Administrator	Ongoing Capability	Cost	-	1. Discontinue 2. - 3. The town performs this activity on an ongoing basis. Therefore, it will not be included as a mitigation action but identified as a capability of the town.
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
9	Archive elevation certificates	Flood, Severe Storm		NFIP Floodplain Administrator	Ongoing Capability	Cost	-	1. Discontinue 2. - 3. The town performs this activity on an ongoing basis. Therefore, it will not be included as a mitigation action but identified as a capability of the town.
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
10	Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Section 7.0	All Hazards		Municipality (via mitigation planning point of contacts) with support from Planning	Ongoing Capability	Cost	-	1. Discontinue 2. - 3. The town performs this activity on an ongoing basis. Therefore, it will not be included as a mitigation
						Level of Protection	-	
						Damages Avoided;	-	



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
				Partners (through their Points of Contact), NYSOEM		Evidence of Success		action but identified as a capability of the town.
11	Complete the ongoing updates of the Comprehensive Emergency Management Plans	All Hazards		Municipality with support from NYSOEM	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. The town performs this activity on an ongoing basis. Therefore, it will not be included as a mitigation action but identified as a capability of the town.
12	Create/enhance/ maintain mutual aid agreements with neighboring communities for continuity of operations.	All Hazards		Municipality with support from Surrounding municipalities and County	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. The town performs this activity on an ongoing basis. Therefore, it will not be included as a mitigation action but identified as a capability of the town.
13	Identify and develop agreements with entities that can provide support with FEMA/SOEM paperwork after disasters; qualified damage assessment personnel – Improve post-disaster capabilities – damage assessment; FEMA/SOEM paperwork compilation, submissions, record-keeping	All Hazards		Municipality with support from County, NYSOEM, FEMA	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. The town performs this activity on an ongoing basis. Therefore, it will not be included as a mitigation action but identified as a capability of the town.
14	Work with regional agencies (i.e. County and SOEM) to help develop damage assessment capabilities at the local level through such things as training programs, certification of qualified	All Hazards		Municipality with support from County, NYSOEM	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. The town performs this activity on an ongoing basis. Therefore, it will not be included as a mitigation action but identified as a capability of the town.





Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
	individuals (e.g. code officials, floodplain managers, engineers).							
15	Participate in local, county and/or state level projects and programs to develop improved structure and facility inventories and hazard datasets to support enhanced risk assessment efforts. Such programs may include developing a detailed inventory of critical facilities based upon FEMA's Comprehensive Data Management System (CDMS) which could be used for various planning and emergency management purposes including: Support the performance of enhanced risk and vulnerability assessments for hazards of concern. Support state, county and local planning efforts including mitigation (including updates to the State HMP), comprehensive emergency management, debris management, and land use. Improved structural and facility inventories could incorporate flood, wind and seismic-specific parameters (e.g. first floor elevations, roof types, structure types based on FEMA-154 "Rapid Visual Screening of	All Hazards		HMP Coordinator	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. The town performs this activity on an ongoing basis. Therefore, it will not be included as a mitigation action but identified as a capability of the town.



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. 3. If discontinue, explain why.
	Buildings for Potential Seismic Hazards” methodologies). It is recognized that these programs will need to be initiated and supported at the County and/or State level, and will require training, tools and funding provided at the county, state and/or federal level.							

### Completed Mitigation Initiatives Not Identified in the Previous Mitigation Strategy

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

- Replaced culvert on lower end of the sound end of Barton Hill Road
- Routine inspection and maintenance of culverts and roadways
- July 2017 flooding – flooding on Michigan Hill and Sears Roads due to runoff from the creeks in southern Cortland County – repair roads due to damage/washout

### Proposed Hazard Mitigation Initiatives for the Plan Update

The Town of Richford participated in a mitigation action workshop on July 11, 2018 and was provided the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 ‘Selecting Appropriate Mitigation Measures for Floodprone Structures’ (March 2007) and FEMA ‘Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards’ (January 2013).

Table 9.12-12 summarizes the comprehensive-range of specific mitigation initiatives the Town of Richford would like to pursue in the future to reduce the effects of hazards. Some of these initiatives may be previous actions carried forward for this plan update. These initiatives are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. The four FEMA mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

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

Table 9.12-13 provides a summary of the prioritization of all proposed mitigation initiatives for the Plan update.



Table 9.12-12. Proposed Hazard Mitigation Initiatives

Project Number	Project Name	Description of the Problem	Description of the Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues?	Estimated Timeline	Lead and Support Agencies	Estimated Cost	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category
T Richford 1	Railroad Ave Flood Mitigation	See Action Worksheet	See Action Worksheet	Flood, Severe Storm	1	No	No	Within 5 years	Town of Richford Highway Department	\$10,000-\$100,000	Railroad damage and LOS, 2 streets, 6 houses, LOS for Owego-Hartford Rail	HMA, Tioga County IDA, NYS DEC, NYS DOT, Owego-Hartford Rail	High	SIP
T Richford 2	Andersen Hill Rd Flood Mitigation	See Action Worksheet	See Action Worksheet	Flood, Severe Storm	1	No	No	Within 5 years	Town of Richford Highway Department	\$10,000-\$100,000	railroad, 1 street, 2 houses; 1 train per day goes through this route in the winter	HMA, Tioga County IDA, NYS DEC, NYS DOT, Owego-Hartford Rail	High	SIP
T. Richford-3	Town Highway Garage in Floodplain	The Town Highway Garage is located in the floodplain and may be susceptible to flood damage from severe storm events.	Determine if the Highway Garage is mitigated to the 500-year event. If not, identify the best mitigation project to protect the garage.	Flood	1	Yes	No	Within 5 Years	Town of Richard Highway Department	Low – less than \$10,000 to determine if garage is protected to the 500-year event	Reduce or eliminate flood damage to building; allow for continuity of operations	Municipal Budget	Medium	SIP

Notes:

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

Acronyms and Abbreviations:

CAV Community Assistance Visit  
 CRS Community Rating System  
 DPW Department of Public Works  
 FEMA Federal Emergency Management Agency  
 FPA Floodplain Administrator  
 HMA Hazard Mitigation Assistance

Potential FEMA HMA Funding Sources:

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

Timeline:

The time required to complete the project

Cost:

Estimated costs associated with implementation

Benefits:

The benefits that implementation of this project will provide.





N/A Not applicable  
NFIP National Flood Insurance Program  
OEM Office of Emergency Management

Mitigation Category:

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

Critical Facility:

- Yes 💧 - Critical Facility located in 1% floodplain



Table 9.12-13. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community	Total	High / Medium / Low
T Richford 1	Railroad Ave Flood Mitigation	1	1	1	1	0	1	1	1	0	1	0	1	1	1	11	High
T Richford 2	Andersen Hill Rd Flood Mitigation	1	1	1	1	0	1	1	1	0	1	0	1	1	1	11	High
T. Richford-3	Town Highway Garage in Floodplain	1	1	1	1	0	1	1	0	0	1	0	1	0	0	8	Medium

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



### **9.12.7 Future Needs to Better Understand Risk/Vulnerability**

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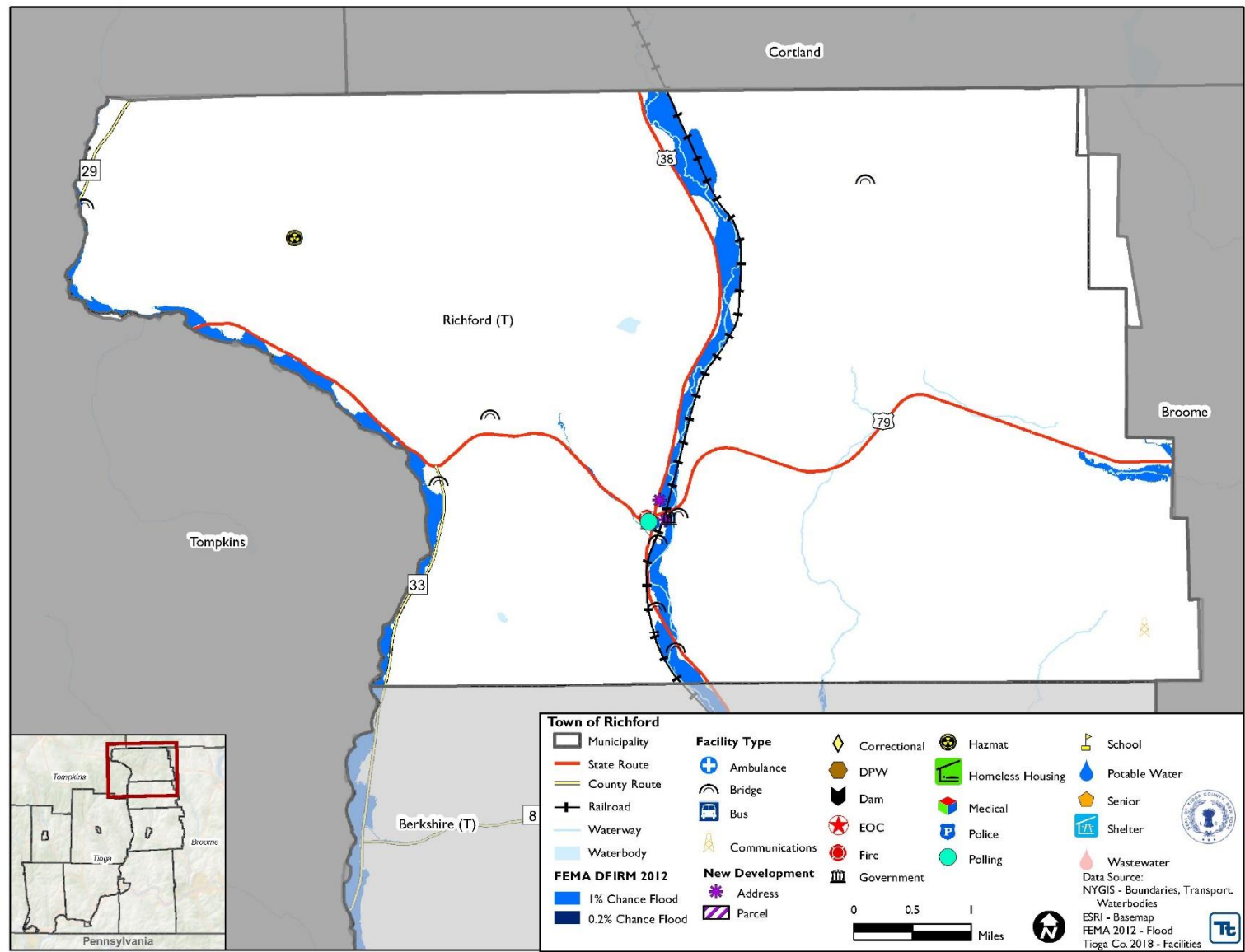
None at this time.

### **9.12.8 Hazard Area Extent and Location**

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

Figure 9.12-1. Town of Richford Hazard Area Extent and Location







Town of Richford Action Worksheet			
<b>Project Name:</b>	Railroad Ave Flood Mitigation		
<b>Project Number:</b>	T Richford 1		
<b>Risk / Vulnerability</b>			
<b>Hazard(s) of Concern:</b>	Flooding		
<b>Description of the Problem:</b>	<p>A small feeder stream of the East Branch of Owego Creek, the Town of Richford, is prone to flash floods. The stream is constricted by the railroad bridge. This stream backs up at the point where it meets the railroad embankment (42.353168, -76.200533). The water stacks up until it has spread north to reach Mill St (approximately one block or 330'). It crosses the railroad, covering the tracks, then floods Railroad Ave and Mill St. before travelling east to join the East Branch of Owego Creek. These railroad tracks are owned by the Tioga County Industrial Development Agency and the train, which goes through daily during the winter, is operated by Owego-Hartford Rail. The main channel of the feeder stream joins the East Branch of Owego Creek approximately 780' downstream from this point. About six to eight residential properties along Railroad Ave and Mill St experience flooding in these events. Five to seven additional homes between NY-38 and the railroad embankment could also experience flooding in these events. Over the previous decade, this type of flooding has occurred in this location approximately three times, including 2011. While there is an opening under the railroad where this stream meets the embankment, it is not large enough to handle the volume from these rain events. Additionally, it can be blocked by debris from upstream, including debris washed down from the heavily forested hill to the west of this location (Andersen Hill State Forest).</p>		
<b>Action or Project Intended for Implementation</b>			
<b>Description of the Solution:</b>	<p>Increase the size of the opening under the railroad. Some alteration(s) to the stream may also be an option to divert floodwaters from this location and/or to provide upstream detention during high flows. Any new/retrofitted opening under the railroad should also include a method for trapping debris before it has a chance to block this opening. This could also be achieved where this stream crosses under NY-38.</p>		
<b>Is this project related to a Critical Facility?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
<b>Is this project related to a Critical Facility located within the 100-year floodplain?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
<b>Level of Protection:</b>	100-year flood event	<b>Estimated Benefits (losses avoided):</b>	Railroad damage and LOS, 2 streets, 6 houses, LOS for Owego-Hartford Rail
<b>Useful Life:</b>	30		
<b>Estimated Cost:</b>	Medium (\$10k - \$100k)		
<b>Plan for Implementation</b>			
<b>Prioritization:</b>	High	<b>Desired Timeframe for Implementation:</b>	1-3 years
<b>Estimated Time Required for Project Implementation:</b>	3-6 months	<b>Potential Funding Sources:</b>	HMA, Tioga County Industrial Development Agency, NYS DEC, NYS DOT, Owego-Hartford Rail
<b>Responsible Organization:</b>	Town of Richford Highway Department	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	Town Comprehensive Plan
<b>Three Alternatives Considered (including No Action)</b>			
<b>Alternatives:</b>	<b>Action</b>	<b>Estimated Cost</b>	<b>Evaluation</b>
	No Action	\$0	Continued repair of Railroad Ave and Mill St after storm, continued cost to tax payers.
	Elevate Railroad Ave	\$1M +	Would not solve the flooding and would likely increase flood risk to other areas, especially the houses between the railroad and NY-38.
	Elevate the railroad	\$1M +	This would cause the floodwaters to be held longer on the upstream side of the railroad until all could be released through the existing opening; may require land acquisition and/or relocation of upstream houses
<b>Progress Report (for plan maintenance)</b>			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			



Town of Richford Action Worksheet		
<b>Project Name:</b>	Railroad Ave Flood Mitigation	
<b>Project Number:</b>	T Richford 1	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Current flood events impact 5 to 7 homes which could cause harm to residents
Property Protection	1	Current flooding impacts residential properties and
Cost-Effectiveness	1	
Technical	1	
Political	0	
Legal	1	Project Area located within Town of Richford
Fiscal	1	HMA, Tioga County Industrial Development Agency, NYS DEC, NYS DOT, Owego-Hartford Rail
Environmental	1	Will reduce impact of areas near railroad
Social	0	
Administrative	1	
Multi-Hazard	0	
Timeline	1	Project can be completed in 1-3 years
Agency Champion	1	
Other Community Objectives	1	Town Comprehensive Plan
<b>Total</b>	11	
<b>Priority (High/Med/Low)</b>	High	



Town of Richford Action Worksheet			
<b>Project Name:</b>	Andersen Hill Rd flood mitigation		
<b>Project Number:</b>	T Richford 2		
<b>Risk / Vulnerability</b>			
<b>Hazard(s) of Concern:</b>	Flooding		
<b>Description of the Problem:</b>	A tributary of the East Branch of Owego Creek floods Andersen Hill Rd in the Town of Richford. During heavy rains, debris blocks a small culvert-style bridge on Andersen Hill Rd (42.345484, -76.203301) causing a backup and flooding. Flash flooding causes these floodwaters to cover the road, as well as the downstream railway, and erosion around the bridge. This railway is owned by the Tioga County Industrial Development Agency and the train along this route is run by the Owego-Hartford Rail. Two houses are affected in such events which have occurred multiple times in the past decade.		
<b>Action or Project Intended for Implementation</b>			
<b>Description of the Solution:</b>	Elevate the roadway and/or increase the size of the culvert to prevent this type of flooding. Some alteration(s) to the stream may also be an option to divert floodwaters from this location. The new/retrofitted opening under Andersen Hill Rd should also include a way to trap debris before it has a chance to block the opening under this road		
<b>Is this project related to a Critical Facility?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
<b>Is this project related to a Critical Facility located within the 100-year floodplain?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
<b>Level of Protection:</b>	100	<b>Estimated Benefits (losses avoided):</b>	railroad, 1 street, 2 houses; 1 train per day goes through this route in the winter
<b>Useful Life:</b>	30		
<b>Estimated Cost:</b>	Medium (\$10k - \$100k)		
<b>Plan for Implementation</b>			
<b>Prioritization:</b>	High	<b>Desired Timeframe for Implementation:</b>	1-3 years
<b>Estimated Time Required for Project Implementation:</b>	3-6 months	<b>Potential Funding Sources:</b>	HMA, Tioga IDA, NYS DEC
<b>Responsible Organization:</b>	Town of Richford Highway Department	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	Town Comprehensive Plan
<b>Three Alternatives Considered (including No Action)</b>			
<b>Alternatives:</b>	<b>Action</b>	<b>Estimated Cost</b>	<b>Evaluation</b>
	No Action	\$0	continued re-building of road surface after storm events, continued cost to tax payers.
	Realign Andersen Hill Rd	\$100k - \$500k	much more expensive; would require property acquisition and moving a house
	retention/detention pond	\$17.50 - \$35.00 per cubic meter of wet detention storage area; land acquisition	would require property acquisition; could require new/separate O&M to function properly
<b>Progress Report (for plan maintenance)</b>			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			



Town of Richford Action Worksheet		
<b>Project Name:</b>	Andersen Hill Rd flood mitigation	
<b>Project Number:</b>	T Richford 2	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Current flood events impact 2 homes which could cause harm to residents
Property Protection	1	Current flooding impacts residential properties
Cost-Effectiveness	1	
Technical	1	
Political	0	
Legal	1	Project Area located within Town of Richford
Fiscal	1	HMA, Tioga IDA, NYS DEC
Environmental	1	Will reduce impact of areas near railroad
Social	0	
Administrative	1	
Multi-Hazard	0	
Timeline	1	Project can be completed in 1-3 years
Agency Champion	1	
Other Community Objectives	1	Town Comprehensive Plan
<b>Total</b>	11	
<b>Priority (High/Med/Low)</b>	High	

## 9.13 TOWN OF SPENCER

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



2010 Population: 2,394  
Population in 100 year Floodplain (SFHA): 387

Land Area: 30,849 acres  
Land Area in Floodplain: 8.2%  
NFIP policies: 36  
NFIP Policies in SFHA: 26  
NFIP Claims: 30  
Total NFIP Losses: \$634,350



Number of Buildings: 1,143  
Total Replacement Building Value: \$317.6 million  
Number of Buildings in the SFHA: 126  
Total Replacement Building Value Exposed in the SFHA: \$33.6 million

Mitigation Focus  
Multi-Hazard



### 9.13.1 Hazard Mitigation Plan Point of Contact

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

Primary Point of Contact	Alternate Point of Contact
Randy Thayer, Supervisor Phone: 607-589-4887 Email: <a href="mailto:rthayer@townofspencer.org">rthayer@townofspencer.org</a>	Allen T. Fulkerson, Assistant Supervisor Phone: 607-227-1552 Email: <a href="mailto:afulkerson@townofspencer.org">afulkerson@townofspencer.org</a> ; <a href="mailto:aft1@frontier.com">aft1@frontier.com</a>

### 9.13.2 Municipal Profile

The Town of Spencer is located in Tioga County, New York. The town is on the western border of the county and is south of Ithaca, New York. The western town line is the border of Chemung County and the northern town line is the border of Tompkins County. The Village of Spencer is within the Town of Spencer. According to the U.S Census Bureau, the town has a total area of 49.9 square miles (129.2 km<sup>2</sup>), of which, 49.5 square miles (128.3 km<sup>2</sup>) of it is land and 0.3 square miles (0.9 km<sup>2</sup>) of it (0.68%) is water. Conjoined New York State Route 34 and New York State Route 96 divide at Spencer village.

The town is governed by a town supervisor and council members. According to the 2010 Census, the community's population was 2,394.

### Growth/Development Trends

The following table summarizes recent residential/commercial development since 2012 to present and any known or anticipated major residential/commercial development and major infrastructure development that has been identified in the next five years within the municipality. Refer to the map in 9.13.8 of this annex which illustrates the hazard areas along with the location of potential new development.

**Table 9.13-1. Growth and Development**

Property or Development Name	Type (e.g. Res., Comm.)	# of Units / Structures	Location (address and/or Parcel ID)	Known Hazard Zone(s)	Description/Status of Development
<b>Recent Development from 2012 to present</b>					
None					
<b>Known or Anticipated Development in the Next Five (5) Years</b>					
Spencer Solar	Comm	N/A	350, 292, & 256 Van Etter Road	None	Solar Panels – In progress

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

### 9.13.3 Natural Hazard Event History Specific to the Municipality

Tioga County has a history of natural and non-natural hazard events as detailed in Volume I, Section 5.0 of this plan. A summary of historical events is provided in each of the hazard profiles and includes a chronology of events that have affected the County and its municipalities. For the purpose of this plan update, events that have occurred in the County from 2012 to December 31, 2017 were summarized to indicate the range and impact of hazard events in the community. Information regarding specific damages is included, if available, based on reference material or local sources. This information is presented in the table below. For details of these and additional events, refer to Volume I, Section 5.0 of this plan.

**Table 9.13-2. Hazard Event History**

Dates of Event	Event Type (Disaster Declaration if applicable)	Tioga County Designated?	Summary of Damages/Losses
2013	N/A	N/A	Rapid rise in creek along Halsey Valley Road. Washed out bridge. \$600K for new bridge. Hulbert Hollow Road was closed for 3 days.
2014	N/A	N/A	Hulbert Hollow lost/damaged 3 culverts and was closed for 3 days. Other Roads had similar damage and were closed for one day. Southill Bridge was closed for one week. One house on

Dates of Event	Event Type (Disaster Declaration if applicable)	Tioga County Designated?	Summary of Damages/Losses
			Hulbert Hollow Road, North Spencer Church., 3 houses on Spencer Road were flooded. \$230K in damages.
June 14, 2015	N/A	N/A	In some areas, homes, schools and other businesses were flooded.
March 14, 2017	DR 4322	Yes	A Nor'easter moved up the eastern US coast on March 13th to late on the 14th. Heavy snow spread across parts of central New York and Pennsylvania late on March 13th. By late evening on the 14th snowfall amounts range from 8 to 33 inches of snow. After the strong area of low pressure moved northeast, lake effect snow bands formed producing more snow across the area on March 15, 2017. Cleanup and temporary bypasses cost roughly \$58K in the Town of Spencer.
July 23, 2017	N/A	N/A	Rapid rises of area streams and creeks resulted in severe flash flooding for the Nichols, NY (\$284K in damages) and Vestal, NY areas.
September 17-18, 2018	Severe Storms and Flooding DR-4397	Yes	Tioga County declared a state of emergency due to flash flooding that caused water and debris to wash over roadways and inundate roads, highways, and bridges. Between two and three inches of rain fell, with some areas seeing up to four inches of snow. The Town of Spencer reported flooding in their community and they lost four bridges.

*Notes:*

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

### 9.13.4 Hazard Vulnerabilities and Ranking

The hazard profiles in Section 5.0 of this plan have detailed information regarding each plan participant's vulnerability to the identified hazards. This section provides a summary of exposure and impacts from significant hazards of concern as identified by the Town of Spencer. For additional vulnerability information relevant to this jurisdiction, refer to Section 5.0.

#### Natural Hazard Risk/Vulnerability Risk Ranking

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

As discussed in Section 5.3 (Hazard Ranking), each participating town or village may have differing degrees of risk exposure and vulnerability compared to Tioga County as a whole. Therefore, each municipality ranked the degree of risk to each hazard as it pertains to their community. The table below summarizes the hazard risk/vulnerability rankings of potential natural hazards for the Town of Spencer. The Town has reviewed the hazard risk/vulnerability risk ranking table and chose to adjust the flood ranking from medium to high as it is a frequent problem in the community and can cause extensive damage.

Table 9.13-3. Hazard Risk/Vulnerability Risk Ranking

Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard <sup>a, b, c</sup>		Probability of Occurrence	Hazard Ranking
Drought	Damage estimate not available		Frequent	Medium
Flood	RCV Exposed to 1% Annual Chance Flood Event	\$4,283,000	Frequent	High*
Severe Storm	100-year MRP	\$0	Frequent	High
	500-year MRP	\$9,504		
Severe Winter Weather	1% GBS	\$1,985,390	Frequent	High
	5% GBS	\$9,926,950		

Notes:

- \* Municipality adjusted the hazard ranking
- a. Building damage ratio estimates based on FEMA 386-2 (August 2001)
- b. Loss estimates for the severe storm and severe winter storm hazards are structural values only and do not include the value of contents.
- c. Loss estimates for the flood hazard represents both structure and contents.

### National Flood Insurance Program (NFIP) Summary

The following table summarizes the NFIP statistics for the Town of Spencer.

Table 9.13-4. NFIP Summary

Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 100-year Boundary (3)
Spencer (T)	36	30	\$634,349.00	1	0	26

Source: FEMA 2018

1. Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA and are current as of February 28, 2018 and are summarized by Community Name. Please note the total number of repetitive loss properties excludes the severe repetitive loss properties. The number of claims represents claims closed by 2/28/2018. Total building and content losses from the claims file provided by FEMA Region 2.
2. Total building and content losses from the claims file provided by FEMA Region 2.

### Critical Facilities at Risk to Flooding

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

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



**Table 9.13-5. Potential Flood Losses to Critical Facilities**

Name	Type	Exposure		Potential Loss from 1% Flood Event		Addressed by Proposed Action
		1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	
North Spencer Christian Academy	School	X	X	15.14	0.00	-
Well 1	Well	X	X	-	-	T. Spencer-5
Well 2	Well	X	X	-	-	T. Spencer-5

Source: Tioga County GIS, FEMA 2012, and Hazus 4.2

The Town of Spencer reviewed the list of critical facilities and determined that schools are not critical for the purpose of essential services during a disaster. As a result, the Town of Spencer did not develop mitigation actions to protect those facilities to the 500-year flood level.

### Identified Issues

The municipality has identified the following vulnerabilities within their community:

- The Spencer Road area floods about 6 times per year from Catatonk Creek as it fills with sediment
- Many of the culverts are undersized in the Town and this leads to washed out roadways and flooded streets.
- Groundwater flooding is also a concern in the town

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

- Village of Candor Main St, Water St.; Village of Owego - Water St., Front St., Hickories Park; Marvin Park; Tioga Center - 17c; Apalachin Rt. 17, area by Subway; Town of Barton, old Rt. 34
- E. Spencer Rd Spencer NY 14883
- Building in areas that have historically been 'wet' or prone to flooding through building up will only push the water out further when the ground is covered with blacktop or cement. Identifying watersheds and areas that should not be targeted for development is important. Recognizing risk and incorporating clean-up plans into new building and retrofits are also key. Total prevention is unlikely; therefore, responses need to be updated.

### 9.13.5 Capability Assessment

This section identifies the following capabilities of the local jurisdiction:

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

### Planning and Regulatory Capability

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



Table 9.13-6. Planning and Regulatory Tools

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
<b>Planning Capability</b>				
Master Plan	Yes, 2015	Local	Planning Department	Town of Spencer Comprehensive Plan
Capital Improvements Plan	No	-	-	-
Floodplain Management / Basin Plan	Yes	Local	Code Enforcement	Code Chapter 77
Stormwater Management Plan	Yes	Local	Planning Department	Comm. Bldg. Const.
Open Space Plan	No	-	-	-
Stream Corridor Management Plan	No	-	-	-
Watershed Management or Protection Plan	No	-	-	-
Economic Development Plan	Yes	County	Economic Development and Planning Department	Tioga County 2020 Strategic Plan
Comprehensive Emergency Management Plan	Yes	County	OEM	Comprehensive Emergency Management Plan
Emergency Operation Plan	Yes	Town/County	OEM	Emergency Operations Plan
Post-Disaster Recovery Plan	Yes	Town	Highway	Post-Disaster Recovery Plan
Transportation Plan	No	-	-	-
Strategic Recovery Planning Report	No	-	-	-
Other Plans:	-	-	-	-
<b>Regulatory Capability</b>				
Building Code	Yes	State & Local	Code Enforcement	NY State Building Code
Zoning Ordinance	No	-	-	-
Subdivision Ordinance	Yes	Local	Planning Department	Code Chapter 128
NFIP Flood Damage Prevention Ordinance	Yes	Federal, State, Local	Code Enforcement	Code Chapter 77
NFIP: Cumulative Substantial Damages	No	-	-	-
NFIP: Freeboard	Yes	State, Local	Code Enforcement	State mandated BFE+2, both residential and non-residential
Growth Management Ordinances	No	-	-	-
Site Plan Review Requirements	Yes	Local	Planning Dept	Code Chapter 117
Stormwater Management Ordinance	No	-	-	-
Municipal Separate Storm Sewer System (MS4)	No	-	-	-
Natural Hazard Ordinance	No	-	-	-



Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
Post-Disaster Recovery Ordinance	No	-	-	-
Real Estate Disclosure Requirement	Yes	State	-	NYS mandate, Property Condition Disclosure Act, NY Code - Article 14 §460-467
Other (Special Purpose Ordinances [i.e., sensitive areas, steep slope])	-	-	-	-

### Administrative and Technical Capability

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

**Table 9.13-7. Administrative and Technical Capabilities**

Resources	Is this in place? (Yes or No)	Department/ Agency/Position
<b>Administrative Capability</b>		
Planning Board	Yes	Planning member/Town/Village
Mitigation Planning Committee	No	-
Environmental Board/Commission	No	-
Open Space Board/Committee	No	-
Economic Development Commission/Committee	No	-
Maintenance Programs to Reduce Risk	No	-
Mutual Aid Agreements	Yes	Highway
<b>Technical/Staffing Capability</b>		
Planner(s) or engineer(s) with knowledge of land development and land management practices	No	-
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	No	-
Planners or engineers with an understanding of natural hazards	No	-
NFIP Floodplain Administrator (FPA)	Yes	Town Supervisor
Surveyor(s)	No	-
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	No	-
Scientist familiar with natural hazards	No	-
Emergency Manager	Yes	Town Supervisor
Grant writer(s)	No	-
Staff with expertise or training in benefit/cost analysis	No	-
Professionals trained in conducting damage assessments	No	-

### Fiscal Capability

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



**Table 9.13-8. Fiscal Capabilities**

Financial Resources	Accessible or Eligible to Use (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	No
Capital improvements project funding	Yes – Town Board w/ local bank
Authority to levy taxes for specific purposes	Yes – Town Board
User fees for water, sewer, gas or electric service	No
Impact fees for homebuyers or developers of new development/homes	No
Stormwater utility fee	No
Incur debt through general obligation bonds	Yes – Town Barn
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	No
Open Space Acquisition funding programs	No
Other	-

### Community Classifications

The table below summarizes classifications for community program available to the Town of Spencer.

**Table 9.13-9. Community Classifications**

Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	No	-	-
NYSDEC Climate Smart Community	No	-	-
Storm Ready Certification	Yes	County	-
Firewise Communities classification	No	-	-
Natural disaster/safety programs in/for schools	No	-	-
Organizations with mitigation focus (advocacy group, non-government)	No	-	-
Public education program/outreach (through website, social media)	No	-	-
Public-private partnership initiatives addressing disaster-related issues	No	-	-

Note:

N/A Not applicable  
 NP Not participating  
 - Unavailable

The classifications listed above relate to the community's ability to provide effective services to lessen its vulnerability to the hazards identified. These classifications can be viewed as a gauge of the community's capabilities in all phases of emergency management (preparedness, response, recovery and mitigation) and are

used as an underwriting parameter for determining the costs of various forms of insurance. The CRS class applies to flood insurance while the BCEGS and Public Protection classifications apply to standard property insurance. CRS classifications range on a scale of 1 to 10 with class 1 being the best possible classification, and class 10 representing no classification benefit. Firewise classifications include a higher classification when the subject property is located beyond 1000 feet of a creditable fire hydrant and is within 5 road miles of a recognized Fire Station.

Criteria for classification credits are outlined in the following documents:

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

### Self-Assessment of Capability

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

**Table 9.13-10. Self-Assessment Capability for the Municipality**

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

### National Flood Insurance Program

#### NFIP Floodplain Administrator (FPA)

Steve Cortright, Code Enforcer

#### Flood Vulnerability Summary

The municipality maintains permit files that contain flood records, repairs, development permits, etc. However, they do not maintain lists/inventories of all properties that have been flood damaged or identify property owners who are interested mitigation (e.g. elevation, acquisition). The FPA noted there is regular flooding in residential areas, but the Town does not keep records. The FPA makes substantial damage estimates and has declared two properties as substantially damaged.



## Resources

The FPA is responsible for floodplain administration with the assistance of Randy Thayer, Supervisor. The FPA stated that NFIP administration services or functions include permit review and inspections. The FPA stated that the Town does not provide education or outreach to the community regarding flood hazards/risk or flood risk reduction through NFIP insurance, mitigation, etc. The FPA feels there are some barriers to running an effective floodplain management program but the FPA does feel adequately supported and trained to fulfill their responsibilities as the municipal floodplain administrator. The FPA would consider attending continuing education and/or certification training on floodplain management if it were offered in the County for all local floodplain administrators.

## Compliance History

The community is in good-standing in the NFIP. According to information provided by NYSDEC, the most recent CAV for the Town was conducted on August 10, 1995 and the most recent CAC was conducted on July 6, 2015.

## Regulatory

The FPA stated that floodplain management regulations/ordinances meet the FEMA and State minimum requirements. The Town has not considered joining the Community Rating System in the past but might be interested in attending a seminar on the program if it were offered locally.

## Integration of Hazard Mitigation into Existing and Future Planning Mechanisms

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

## Planning

**Master Plan:** The Town of Spencer has a Master/Comprehensive Plan (land-use plan). The plan includes areas of natural hazard risk (e.g. flood-prone areas, steep slopes) and refers to the Countywide Hazard Mitigation Plan.

**Comprehensive Emergency Management Plan:** The Town of Spencer has a Comprehensive Emergency Management Plan. The Plan does not refer to the Hazard Mitigation plan at this time.

## Regulatory and Enforcement (Ordinances)

**Zoning, Subdivision, and Site Plan Review:** The Town of Spencer's municipal zoning and subdivision regulations, and site plan review ordinance (Chapter 142 of the municipal Code) consider natural hazard risk (e.g. the presence of floodplains, steep slopes, etc.) and require developers to take additional actions to mitigate natural hazard risk (e.g. undergrounding utilities, stormwater detention, creating easements in areas/zones of hazard risk).

**Flood Damage Prevention Ordinance:** The Town of Spencer's NFIP Flood Damage Protection Ordinance (Chapter 77, amended February 14, 2012) meets the minimum Federal and State NFIP regulatory requirements.

## Operational and Administration

The NFIP Floodplain Management functions in the Town are carried out by the Code Enforcement Officer. The Town of Spencer does not have a municipal planner or contract planning firm. The Town's Planning Board takes into account risk by analyzing each plan and assess them.



The Town of Spencer Highway Department provides routine maintenance of drainage ditches in the town. It should be noted that many of the culverts are undersized, leading to flooded roadways. Upgrading the culverts is an ongoing activity for the town and continues to be done as funding becomes available.

The Town does not have any other Boards or Committees that include functions with respect to managing natural hazard risk. The Town has staff or contract with firms that have experience with developing Benefit-Cost Analysis. Staff perform Substantial Damage Estimates but the Town contracts with firms that have experience in preparing grant applications for mitigation projects. The Code Officer receives training or continuing professional education which supports natural hazard risk reduction. The FPA indicated that the Town does not have other hazard management programs in place such as vegetation management.

According to the FPA, no Town staff have job descriptions that specifically include identifying and/or implementing mitigation projects/actions or other efforts to reduce natural hazard risk and is uncertain if any staff have participated in associations, organizations, groups or other committees that support natural hazard risk reduction and build hazard management capabilities.

### **Funding**

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The Town of Spencer's municipal/operating budget does not include line items for mitigation projects/activities. The Town has a Capital Improvements Budget but does not include a budget for mitigation-related project. The Town has not pursued or been awarded grant funds for mitigation-related projects and does not have any other mechanisms to fiscally support hazard mitigation projects.

### **Education and Outreach**

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The Town uses local television programming to inform citizens on natural hazards (e.g. safe use of generators, emergency preparedness, flood hazard information).

### **Sheltering, Evacuation, and Temporary Housing**

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

Tioga County, through a buildable land analysis, has identified areas suitable for placing temporary and permanent housing. Refer to Section 4.7.5 in Section 4 (County Profile) of Volume 1 of this plan for a description of resources identified by the county to support municipalities with the identification of evacuation, sheltering, and temporary and permanent housing. Each year, during the annual HMP progress meeting, the municipality will discuss their progress in identifying shelters, evacuation routes, and temporary and permanent housing for their community.

### **Temporary and Long-Term Housing**

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The Town of Spencer has not identified potential sites for the placement of temporary housing for residents displaced by a disaster or potential site suitable for relocating houses of the floodplain and/or building new homes once properties in the floodplain are acquired.

### **Evacuation and Sheltering Needs**

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The Town of Spencer identified the Mid School as a designated emergency shelter. The capacity of the facility is not known but it has a backup generator. The School does not accommodate pets. Due to the nature of location-based hazard events, no evacuation routes are currently in place in the town. However, the event of an evacuation, the town would utilize the main roads in and out of the town to evacuate its residents.



### 9.13.6 Mitigation Strategy and Prioritization

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

#### Past Mitigation Initiative Status

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



Table 9.13-11. Status of Previous Mitigation Actions

Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
0	Based on Town work with the USC use the plan developed to address many flood issues. The USC has been constructing wetlands in and near these locations to hold back peak flows during storm events. Flooding Concerns- Michigan and Hulbert Hollow Road – houses are of concern Spencer Road Crumtown Road East Hill Road Bridge – maintenance needed near bridge; removal of debris and possible increase size of culvert.	Flood	A. Michigan & Hulbert Hollow Road. Both get floodwaters from Tompkins Co. B. Spencer Rd.'s creek needs dredging. C. Crumtown Rd. -D. E. Hill Rd. Bridge & Trees blocked water flow.	A. Town Administration, USC, County SWCD B. County SWCD C. County SWCD D. Town	No Progress	Cost	-	1. Discontinue 2. - 3. No progress has been made by USC. The wetlands have always been there. This is an ongoing project for the Town
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
1	Hulbert Hollow control dam in headwaters, Rosgen Method (natural stream restoration) used for stream bank protection along with wetlands restoration above Spencer Lake.	Flood	Homes/church flooded	Town NFIP Administrator, USC, Fingerlakes Land Trust, County SWCD	In progress	Cost		1. Contact Tompkins County; Include in 2018 HMP 2. 3.
						Level of Protection		
						Damages Avoided; Evidence of Success		
2	Acquire property along Sulphur Springs Creek and install 4 drop structures approximately 200 yards apart in order to capture sediment and gravel moving through the system before it reaches Catatonk Creek main stem.	Flood		County/State	No progress	Cost		1. Include in 2018 HMP 2. 3.
						Level of Protection		
						Damages Avoided; Evidence of Success		
3		Flood			Complete	Cost	\$600K	1. Discontinue



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
						Level of Protection	25-year	
	South Hill Bridge-Replace eastern most bridge with a larger one to prevent road from being washed out every flooding event. Relocate said bridge west to replace another culvert which is also too small.		Bridge washout	Town NFIP Administrator, Municipal DPW		Damages Avoided; Evidence of Success	Reduce or eliminate road washouts	2. 3. Complete – project was completed in 2016
4	Retrofit structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority. Phase 1: Identify appropriate candidates for retrofitting based on cost-effectiveness versus relocation. Phase 2: Where retrofitting is determined to be a viable option, work with property owners toward implementation of that action based on available funding from FEMA and local match availability.	Flood, Severe Storm, Earthquake	Home flooding repeatedly & roads	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	Ongoing Capability	Cost	-	1. Discontinue 2. - 3. The Town works with structures in hazard-prone areas on as needed basis. If homeowners are interested in mitigation, the Town will work with the homeowners and develop a grant application as appropriate.
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
5	Purchase, or relocate structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority. Phase 1: Identify appropriate candidates for relocation based on cost-	Flood, Severe Storm	Continuous flooding; Until headwater are dammed in Tompkins Co. and Catatunk Creek is dug out between Rt. 9 and E. Spencer Road, this will	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	Ongoing Capability	Cost	-	1. Discontinue 2. - 3. The Town works with structures in hazard-prone areas on as needed basis. If homeowners are interested in mitigation, the Town will work with the homeowners and develop a grant application as appropriate.
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
	effectiveness versus retrofitting. Phase 2: Where relocation is determined to be a viable option, work with property owners toward implementation of that action based on available funding from FEMA and local match availability.		always be an issue.					
6	Maintain compliance with and good-standing in the NFIP including adoption and enforcement of floodplain management requirements (e.g. regulating all new and substantially improved construction in Special Hazard Flood Areas), floodplain identification and mapping, and flood insurance outreach to the community. Further, continue to meet and/or exceed the minimum NFIP standards and criteria through the following NFIP-related continued compliance actions identified as Initiatives 7 – 16 (below).	Flood, Severe Storms		Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, ISO FEMA	Ongoing capability	Cost	\$190,225	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. Ongoing capability
7	Begin the process to adopt higher regulatory standards to manage flood risk (i.e. increased freeboard, cumulative substantial damage/improvements).	Flood, Severe Storms		Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	Ongoing capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. Ongoing capability
8		All Hazards				Cost	-	1. Discontinue



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
						Level of Protection		
	Conduct and facilitate community and public education and outreach for residents and businesses to include, but not be limited to, the following to promote and effect natural hazard risk reduction: Provide and maintain links to the HMP website, and regularly post notices on the County/municipal homepage(s) referencing the HMP webpages. Prepare and distribute informational letters to flood vulnerable property owners and neighborhood associations, explaining the availability of mitigation grant funding to mitigate their properties, and instructing them on how they can learn more and implement mitigation. Use email notification systems and newsletters to better educate the public on flood insurance, the availability of mitigation grant funding, and personal natural hazard risk reduction measures. Work with neighborhood associations, civic and business groups to disseminate information on flood insurance and the availability of mitigation grant funding.			Municipality with support from Planning Partners, NYSOEM, FEMA	Ongoing capability		-	2. -
						Damages Avoided; Evidence of Success	-	3. Ongoing capability



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
9	Have designated NFIP Floodplain Administrator (FPA) become a Certified Floodplain Manager through the ASFPM, and pursue relevant continuing education training such as FEMA Benefit-Cost Analysis.	Flood, Severe Storms		NFIP Floodplain Administrator	Ongoing capability	Cost	-	1. Discontinue 2. - 3. Ongoing capability
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
10	Archive elevation certificates	Flood, Severe Storm		NFIP Floodplain Administrator	Ongoing capability	Cost	-	1. Discontinue 2. - 3. Ongoing capability
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
11	Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Section 7.0	All Hazards		Municipality (via mitigation planning point of contacts) with support from Planning Partners (through their Points of Contact), NYSOEM	Ongoing capability	Cost	-	1. Discontinue 2. - 3. Ongoing capability
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
12	Complete the ongoing updates of the Comprehensive Emergency Management Plans	All Hazards		Municipality with support from NYSOEM	Ongoing capability	Cost	-	1. Discontinue 2. - 3. Ongoing capability
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
13	Create/enhance/ maintain mutual aid agreements with neighboring communities for continuity of operations.	All Hazards		Municipality with support from Surrounding municipalities and County	Ongoing capability	Cost	-	1. Discontinue 2. - 3. Ongoing capability
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
14	Identify and develop agreements with entities that can provide support with FEMA/SOEM paperwork after disasters; qualified damage assessment personnel – Improve post-disaster capabilities – damage assessment; FEMA/SOEM paperwork compilation, submissions, record-keeping	All Hazards		Municipality with support from County, NYSOEM, FEMA	Ongoing capability	Cost	-	1. Discontinue 2. - 3. Ongoing capability
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
15	Work with regional agencies (i.e. County and SOEM) to help develop damage assessment capabilities at the local level through such things as training programs, certification of qualified individuals (e.g. code officials, floodplain managers, engineers).	All Hazards		Municipality with support from County, NYSOEM	Ongoing capability	Cost	-	1. Discontinue 2. - 3. Ongoing capability
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
16	Participate in local, county and/or state level projects and programs to develop improved structure and facility inventories and hazard datasets to support enhanced risk assessment efforts. Such programs may include developing a detailed inventory of critical facilities based upon FEMA's Comprehensive Data Management System (CDMS) which could be used for various planning and emergency	All Hazards		HMP Coordinator	Ongoing capability	Cost	-	1. Discontinue 2. - 3. Ongoing capability
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. 3. If discontinue, explain why.
	management purposes including: Support the performance of enhanced risk and vulnerability assessments for hazards of concern. Support state, county and local planning efforts including mitigation (including updates to the State HMP), comprehensive emergency management, debris management, and land use. Improved structural and facility inventories could incorporate flood, wind and seismic-specific parameters (e.g. first floor elevations, roof types, structure types based on FEMA-154 "Rapid Visual Screening of Buildings for Potential Seismic Hazards" methodologies). It is recognized that these programs will need to be initiated and supported at the County and/or State level, and will require training, tools and funding provided at the county, state and/or federal level.							



### Completed Mitigation Initiatives Not Identified in the Previous Mitigation Strategy

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

- None identified

### Proposed Hazard Mitigation Initiatives for the Plan Update

Tioga County held a mitigation action workshop on July 11, 2018 and provided municipalities with the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 ‘Selecting Appropriate Mitigation Measures for Floodprone Structures’ (March 2007) and FEMA ‘Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards’ (January 2013).

Table 9.13-12 summarizes the comprehensive-range of specific mitigation initiatives the Town of Spencer would like to pursue in the future to reduce the effects of hazards. Some of these initiatives may be previous actions carried forward for this plan update. These initiatives are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. The four FEMA mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

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

Table 9.13-13 provides a summary of the prioritization of all proposed mitigation initiatives for the Plan update.





Table 9.13-12. Proposed Hazard Mitigation Initiatives

Project Number	Project Name	Description of the Problem	Description of the Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues?	Estimated Timeline	Lead and Support Agencies	Estimated Cost	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category
T. Spencer 1 (former action)	Hulbert Hollow Road Elevation	See Action Worksheet	See Action Worksheet	Flooding	1, 2	No	No	1 year	Town Maintenance Department	\$1 Million, High	Flood losses and damage to road and properties in the area would be reduced and/or eliminated.	FEMA FMA and HMGP	High	SIP
T. Spencer 2 (former 0)	Flooding at various locations in the Town	Based on Town work with the USC use the plan developed to address many flood issues. The USC has been constructing wetlands in and near these locations to hold back peak flows during storm events. Flooding Concerns- A. Michigan and Hulbert Hollow Road – houses are of concern B. Spencer Road C. Crumtown Road	Using the plan developed with USC, address the flood issues in accordance to recommendations in the plan. The areas the town will concentrate on will include: Michigan and Hulbert Hollow Road – houses are of concern; Spencer Road; and Crumtown Road	Flood	1, 2	No	No	2 years	A. Town Administration, USC, County SWCD B. County SWCD C. County SWCD	\$1 million or more	Reduce or eliminate flood losses, increase quality of environment	FEMA FMA and HMGP, Town Budget	High	SIP, NSP
T. Spencer 3 (former 1)	Hulbert Hollow control dam	The stream that flows along Hulbert Hollow Road is need of restoration. It is an area of flood concern to the Town.	Hulbert Hollow control dam in headwaters, Rosgen Method (natural stream restoration) used for stream bank protection along with wetlands	Flood	1	No	No	5 years	Town NFIP Administrator, USC, Fingerlakes Land Trust	\$1 million	Reduce or eliminate flood losses, increase quality of environment	FEMA FMA and HMGP, Town Budget	Medium	SIP



Table 9.13-12. Proposed Hazard Mitigation Initiatives

Project Number	Project Name	Description of the Problem	Description of the Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues?	Estimated Timeline	Lead and Support Agencies	Estimated Cost	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category
			restoration above Spencer Lake.											
T. Spencer 4 (former 2)	Acquire property along Sulphur Springs Creek	A home along this creek is floodprone and has experienced flood damages. Additionally, the Creek builds up with sediment which is then brought into Catanok Creek, impacting the water quality of the creeks.	Acquire property along Sulphur Springs Creek and install 4 drop structures approximately 200 yards apart in order to capture sediment and gravel moving through the system before it reaches Catatonk Creek main stem.	Severe Storm, Flood	1	No	No	2 years	Town Board, homeowner, support from Tioga County and NYSDEC	\$500,000	Eliminate flood damage to home, reduce sediment in creeks	FEMA FMA and HMGP, Town Budget	Medium	SIP
T. Spencer-5	Critical Facility Outreach	Well 1 and Well 2 are identified critical facilities in the town and both are located in the 1% annual chance flood area.	The town will contact the facilities manager and discuss options for protecting the facility to the 500 year level.	Flood	1	Yes	No	Within 1 year	Town Floodplain Administrator	Staff Time	Provide outreach to the property owner and informing them of potential flood damage and possible solutions	Municipal Budget	Medium	EAP

Notes:

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

Acronyms and Abbreviations:

CAV Community Assistance Visit

Potential FEMA HMA Funding Sources:

FMA Flood Mitigation Assistance Grant Program

Timeline:

The time required to complete the project





CRS      Community Rating System  
DPW      Department of Public Works  
FEMA      Federal Emergency Management Agency  
FPA      Floodplain Administrator  
HMA      Hazard Mitigation Assistance  
N/A      Not applicable  
NFIP      National Flood Insurance Program  
OEM      Office of Emergency Management

HMGP      Hazard Mitigation Grant Program  
PDM      Pre-Disaster Mitigation Grant Program

Cost:  
Estimated costs associated with implementation  
Benefits:  
The benefits that implementation of this project will provide.

Mitigation Category:

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

Critical Facility:


- Yes  - Critical Facility located in 1% floodplain

Table 9.13-13. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community	Total	High / Medium / Low
T Spencer 1	Hulbert Hollow Road Elevation	1	1	1	1	1	1	1	0	1	1	0	1	1	1	12	High
T. Spencer 2 (former 0)	Based on Town work with the USC use the plan developed to address many flood issues. The USC has been constructing wetlands in and near these locations to hold back peak flows during storm events. Flooding Concerns- A. Michigan and Hulbert Hollow Road – houses are of concern B. Spencer Road C. Crumtown Road	1	1	1	1	0	1	0	1	1	0	0	1	0	0	8	Medium
T. Spencer 3 (former 1)	Hulbert Hollow control dam in headwaters, Rosgen Method (natural stream restoration) used for stream bank protection along with wetlands restoration above Spencer Lake.	1	1	1	1	0	1	0	1	0	0	0	1	0	0	6	Medium
T. Spencer 4 (former 2)	Acquire property along Sulphur Springs Creek and install 4 drop structures approximately 200 yards apart in order to capture sediment and gravel moving through the system before it reaches Catatonk Creek main stem.	1	1	1	1	0	0	0	1	1	0	0	1	0	0	7	Medium
T. Spencer-5	Critical Facility Outreach	0	1	1	1	0	0	1	1	1	0	0	0	1	1	8	Medium

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



### **9.13.7 Future Needs to Better Understand Risk/Vulnerability**

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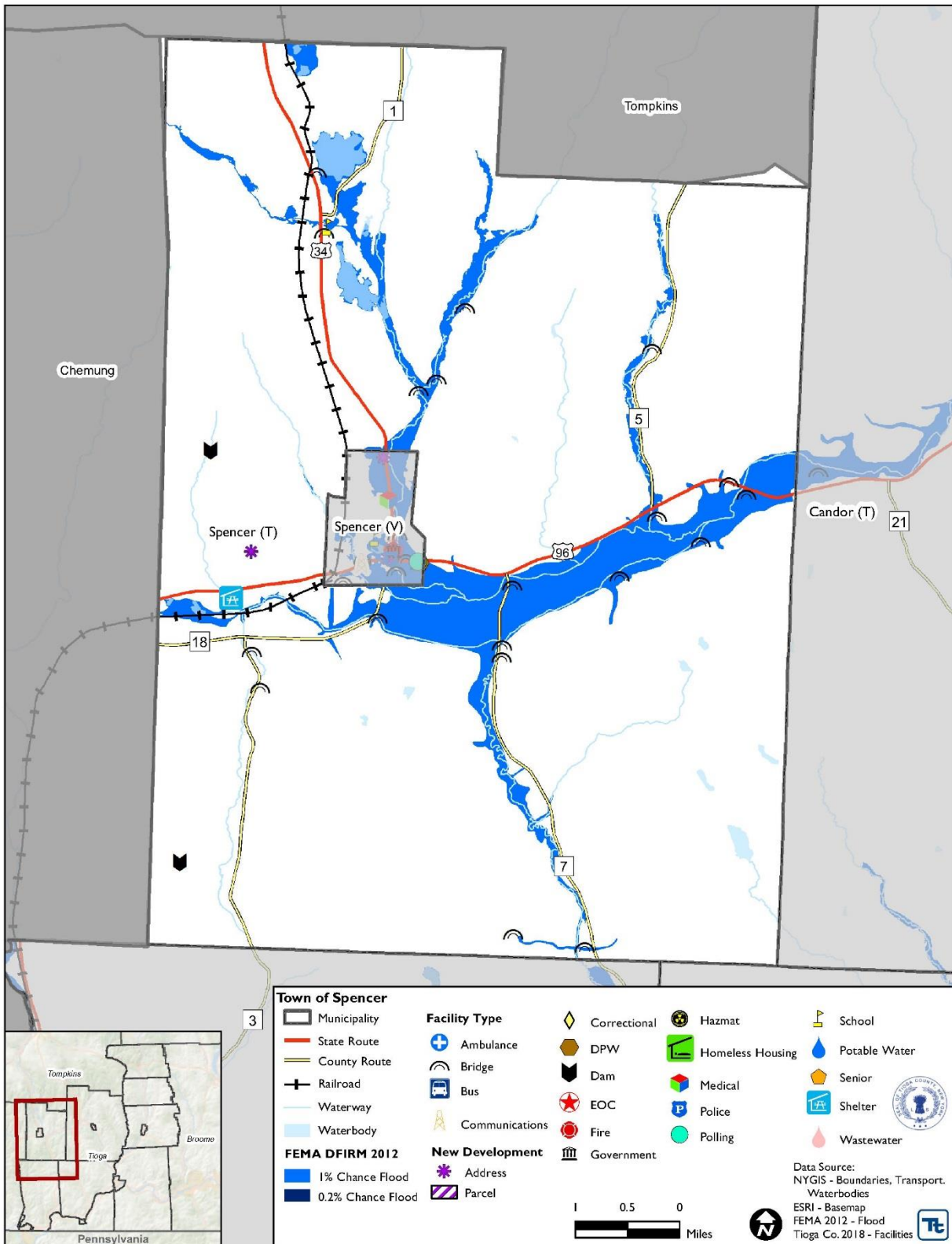
None at this time.

### **9.13.8 Hazard Area Extent and Location**

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

Figure 9.13-1. Town of Spencer Hazard Area Extent and Location





Town of Spencer Action Worksheet			
<b>Project Name:</b>	Hulbert Hollow Road Elevation		
<b>Project Number:</b>	T. Spencer-1		
<b>Risk / Vulnerability</b>			
<b>Hazard(s) of Concern:</b>	Flooding		
<b>Description of the Problem:</b>	During major rain events/storms, there is repetitive flooding along Hulbert Creek Road where it crosses over Hulbert Creek due to the undersized culverts. As a result, the Creek becomes inundated and cannot handle water flow causing water to back up and overflow the road. The flood water crosses Hulbert Hollow Road damaging property, flooding homes and impacting North Spencer Christian Academy School. Additionally, when the road floods it causes traffic detours which creates problems gaining access to the school.		
<b>Action or Project Intended for Implementation</b>			
<b>Description of the Solution:</b>	Several solutions were discussed, and the best option appears to be upsize the existing culverts and elevate portions of Hulbert Hollow Road Spencer Road. The project would involve elevating the road and upsizing the culverts with wing walls and debris catching devices. This would allow water to pass through the culverts without over topping the road.		
<b>Is this project related to a Critical Facility?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
<b>Is this project related to a Critical Facility located within the 100-year floodplain?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
<b>Level of Protection:</b>	500-year	<b>Estimated Benefits (losses avoided):</b>	Flood losses and damage to road and properties in the area would be reduced and/or eliminated.
<b>Useful Life:</b>	50 years		
<b>Estimated Cost:</b>	\$1 million		
<b>Plan for Implementation</b>			
<b>Prioritization:</b>	High (2)	<b>Desired Timeframe for Implementation:</b>	2 years
<b>Estimated Time Required for Project Implementation:</b>	1 year	<b>Potential Funding Sources:</b>	FEMA FMA and HMGP
<b>Responsible Organization:</b>	Town Maintenance Department	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	Hazard Mitigation Plan
<b>Three Alternatives Considered (including No Action)</b>			
<b>Alternatives:</b>	<b>Action</b>	<b>Estimated Cost</b>	<b>Evaluation</b>
	No Action	\$0	Problem will continue
	Acquire and demo at least 5 homes in area	\$800,000 million	Eliminate flood losses and damage to properties in the area and return land to its natural and beneficial uses.
	Elevate 5 homes in area	\$600,000	Flood losses and damage to 5 homes will be would be reduced and/or eliminated. However, properties in the area will continue to experience flooding which may reduce access to elevated homes.
<b>Progress Report (for plan maintenance)</b>			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			



Town of Spencer Action Worksheet		
<b>Project Name:</b>	Hulbert Hollow Road Elevation	
<b>Project Number:</b>	T. Spencer-1	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
<b>Life Safety</b>	1	Current flooding events impact residential properties and North Spencer Christian Academy School and can endanger individuals inside these structures
<b>Property Protection</b>	1	Current flooding events impact residential properties and North Spencer Christian Academy School
<b>Cost-Effectiveness</b>	1	
<b>Technical</b>	1	Technical Requirements are feasible to implement
<b>Political</b>	1	
<b>Legal</b>	1	Project area within Town of Spencer
<b>Fiscal</b>	1	FEMA HMA Grants
<b>Environmental</b>	0	
<b>Social</b>	1	
<b>Administrative</b>	1	Project will be performed by Town Maintenance Department
<b>Multi-Hazard</b>	0	
<b>Timeline</b>	1	Project can be implemented in 2 years
<b>Agency Champion</b>	1	
<b>Other Community Objectives</b>	1	Town Hazard Mitigation Plan
<b>Total</b>	12	
<b>Priority (High/Med/Low)</b>	High	





Town of Spencer Action Worksheet			
<b>Project Name:</b>	Acquire property along Sulphur Springs Creek		
<b>Project Number:</b>	T. Spencer-4		
<b>Risk / Vulnerability</b>			
<b>Hazard(s) of Concern:</b>	Flooding, Severe Storm		
<b>Description of the Problem:</b>	A home along this creek is floodprone and has experienced flood damages. Additionally, the Creek builds up with sediment which is then brought into Catanok Creek, impacting the water quality of the creeks.		
<b>Action or Project Intended for Implementation</b>			
<b>Description of the Solution:</b>	Acquire property along Sulphur Springs Creek and install 4 drop structures approximately 200 yards apart in order to capture sediment and gravel moving through the system before it reaches Catanok Creek main stem.		
<b>Is this project related to a Critical Facility?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
<b>Is this project related to a Critical Facility located within the 100-year floodplain?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
<b>Level of Protection:</b>	100-year	<b>Estimated Benefits (losses avoided):</b>	Eliminate flood damage to home, reduce sediment in creeks
<b>Useful Life:</b>	50 years		
<b>Estimated Cost:</b>	\$500,000		
<b>Plan for Implementation</b>			
<b>Prioritization:</b>	Medium	<b>Desired Timeframe for Implementation:</b>	2 years
<b>Estimated Time Required for Project Implementation:</b>	2 years	<b>Potential Funding Sources:</b>	FEMA FMA and HMGP, Town Budget
<b>Responsible Organization:</b>	Town Board, homeowner, support from Tioga County and NYSDEC	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	Hazard Mitigation Plan
<b>Three Alternatives Considered (including No Action)</b>			
<b>Alternatives:</b>	<b>Action</b>	<b>Estimated Cost</b>	<b>Evaluation</b>
	No Action	\$0	Problem will continue
	Elevate home in the area	\$200,000	Flood losses and damages will be reduced or eliminated to the home; however, the stream quality will still be impacted
	Dredge the creeks	\$500,000	Develop a dredge maintenance plan; however, the issues could still pose a problem because during severe rain events, sediment still may post a problem.
<b>Progress Report (for plan maintenance)</b>			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			



Town of Spencer Action Worksheet		
<b>Project Name:</b>	Acquire property along Sulphur Springs Creek	
<b>Project Number:</b>	T. Spencer-4	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Reduce or eliminate threats to life and safety of residents in this area
Property Protection	1	Protect home and surrounding property from flood damages
Cost-Effectiveness	1	
Technical	1	
Political	0	
Legal	0	
Fiscal	0	
Environmental	1	Reduce sedimentation in creeks; increase water quality
Social	1	
Administrative	0	
Multi-Hazard	0	Flood
Timeline	1	
Agency Champion	0	
Other Community Objectives	0	
<b>Total</b>	7	
<b>Priority (High/Med/Low)</b>	Medium	

## 9.14 VILLAGE OF SPENCER

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



### 9.14.1 Hazard Mitigation Plan Point of Contact

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

Primary Point of Contact	Alternate Point of Contact
Ken Sutfin, Mayor Phone (cell): 607-592-2268 Email: <a href="mailto:mayor@villageofspencer.com">mayor@villageofspencer.com</a>	Gilbert Knapp, Village Trustee Phone: 607-589-6812 Email: <a href="mailto:gknapp@htva.net">gknapp@htva.net</a>
<b>Flood Damage Prevention Officer</b>	
Mike Katchmire, Code Enforcement Officer 607-589-6235 Email: <a href="mailto:mkatchmir@aol.com">mkatchmir@aol.com</a>	

### 9.14.2 Municipal Profile

The Village of Spencer is located within the Town of Spencer in Tioga County, New York. The village is located South of Ithaca, New York and West of Binghamton. According to the U.S. Census Bureau, the village has a total area of 1.0 square miles (2.7 km<sup>2</sup>). The Catatonk Creek flows past the village and Nichols Park is in the center of the Village which provides recreational facilities for the community. New York State Route 34 and New York State Route 96 diverge in the village.

The village is governed by the village mayor and four trustees. According to the 2010 Census, the community's population was 759.

### Growth/Development Trends

The following table summarizes recent residential/commercial development since 2012 to present and any known or anticipated major residential/commercial development and major infrastructure development that has been identified in the next five years within the municipality. Refer to the map in 9.14.8 of this annex which illustrates the hazard areas along with the location of potential new development.

**Table 9.14-1. Growth and Development**

Property or Development Name	Type (e.g. Res., Comm.)	# of Units / Structures	Location (address and/or Parcel ID)	Known Hazard Zone(s)	Description/Status of Development
<b>Recent Development from 2012 to present</b>					
Mint Auto	Commercial	1	182 N Main St	1% Annual Chance Flood Event	Car Dealership
<b>Known or Anticipated Development in the Next Five (5) Years</b>					
Fun City	Commercial	1	8 W Tioga St	No	Convenient Food Store and service station

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

### 9.14.3 Natural Hazard Event History Specific to the Municipality

Tioga County has a history of natural and non-natural hazard events as detailed in Volume I, Section 5.0 of this plan. A summary of historical events is provided in each of the hazard profiles and includes a chronology of events that have affected the County and its municipalities. For the purpose of this plan update, events that have occurred in the County from 2012 to December 31, 2017 were summarized to indicate the range and impact of hazard events in the community. Information regarding specific damages is included, if available, based on reference material or local sources. This information is presented in the table below. For details of these and additional events, refer to Volume I, Section 5.0 of this plan.

**Table 9.14-2. Hazard Event History**

Dates of Event	Event Type (Disaster Declaration if applicable)	Tioga County Designated?	Summary of Damages/Losses
June 14, 2015	N/A	N/A	Rainfall totals in Tioga County ranged from 0.51 inches in Waverly to 2.7 inches in Newark Valley. In the Village of Spencer, in some areas, homes, schools and other businesses were flooded.

Dates of Event	Event Type (Disaster Declaration if applicable)	Tioga County Designated?	Summary of Damages/Losses
March 14, 2017	Severe Winter Storm and Snowstorm (DR-4322)	Yes	A Nor'easter moved up the eastern US coast on March 13th to late on the 14th. Heavy snow spread across parts of central New York and Pennsylvania late on March 13th. By late evening on the 14th snowfall amounts range from 8 to 33 inches of snow. After the strong area of low pressure moved northeast, lake effect snow bands formed producing more snow across the area on March 15, 2017. Excessive snow removal costs in the Village of Spencer were \$1949.50.
July 23, 2017	N/A	N/A	Rapid rises of area streams and creeks resulted in severe flash flooding for the Nichols, NY (\$284K in damages) and Vestal, NY areas.
September 17-18, 2018	Severe Storms and Flooding (DR-4397)	Yes	Between 3.21 inches and 4.5 inches of rain in Tioga County, with 4.35 inches recorded in the Village of Spencer. The County issued a state of emergency due to numerous flooded roads and highways. Schools were closed in the Village. Two roads were closed in Spencer where the rushing water of Seeleytown Creek by Raymond-Hadley Packaging Plant undercut the roads and took big chunks out of the paving. The Village also lost several bridges and some streets are still detoured.

*Notes:*

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

#### 9.14.4 Hazard Vulnerabilities and Ranking

The hazard profiles in Section 5.0 of this plan have detailed information regarding each plan participant's vulnerability to the identified hazards. This section provides a summary of exposure and impacts from significant hazards of concern as identified by the Village of Spencer. For additional vulnerability information relevant to this jurisdiction, refer to Section 5.0.

#### Natural Hazard Risk/Vulnerability Risk Ranking

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

As discussed in Section 5.3 (Hazard Ranking), each participating town or village may have differing degrees of risk exposure and vulnerability compared to Tioga County as a whole. Therefore, each municipality ranked the degree of risk to each hazard as it pertains to their community. The table below summarizes the hazard risk/vulnerability rankings of potential natural hazards for the Village of Spencer. The Village has reviewed the hazard risk/vulnerability risk ranking table and agreed with the calculated ranking for each hazard of concern. The Village noted that the fire department, municipal hall and library all have backup power. The Town of Spencer's highway department serves the Village; however, the Village does maintain the trees in the village. They work with an arborist to identify the health of trees and will remove trees that pose a threat to infrastructure in the community.

**Table 9.14-3. Hazard Risk/Vulnerability Risk Ranking**

Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard <sup>a, b, c</sup>		Probability of Occurrence	Hazard Ranking
Drought	Damage estimate not available		Frequent	Medium
Flood	RCV Exposed to 1% Annual Chance Flood Event	\$33,581,000	Frequent	Medium
Severe Storm	100-year MRP	\$0	Frequent	High
	500-year MRP	<\$1,000		
Severe Winter Weather	1% GBS	\$729,050	Frequent	High
	5% GBS	\$3,645,250		

Notes:

- \* The municipality adjusted the hazard ranking
- a. Building damage ratio estimates based on FEMA 386-2 (August 2001)
- b. Loss estimates for the severe storm and severe winter storm hazards are structural values only and do not include the value of contents.
- c. Loss estimates for the flood hazard represents both structure and contents.

### National Flood Insurance Program (NFIP) Summary

The following table summarizes the NFIP statistics for the Village of Spencer.

**Table 9.14-4. NFIP Summary**

Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 100-year Boundary (3)
Spencer (V)	35	5	\$12,171.00	2	0	34

Source: FEMA 2018

- Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA and are current as of February 28, 2018 and are summarized by Community Name. Please note the total number of repetitive loss properties excludes the severe repetitive loss properties. The number of claims represents claims closed by 2/28/2018. Total building and content losses from the claims file provided by FEMA Region 2.
- Total building and content losses from the claims file provided by FEMA Region 2.

### Critical Facilities Flood Risk

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

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

**Table 9.14-5. Potential Flood Losses to Critical Facilities**

Name	Type	Exposure		Potential Loss from 1% Flood Event		Addressed by Proposed Action
		1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	
Town of Spencer Highway Garage <sup>2</sup>	DPW	X	X	-	-	V. Spencer-6
Spencer <sup>1</sup>	EOC	X	X	33.64	-	V. Spencer-1
Spencer <sup>1</sup>	Fire	X	X	95.14	-	V. Spencer-1
Spencer Public Library	Library	X	X	-	-	V. Spencer-1
Spencer Town Hall <sup>2</sup>	Municipal	X	X	-	-	V. Spencer-6
Spencer Village Hall <sup>3</sup>	Municipal	X	X	14.22	66.10	-
Spencer-Van Etten Middle School <sup>4</sup>	School	X	X	-	-	-

Source: Tioga County GIS, FEMA 2012, and Hazus 4.2

1. The village is currently working on relocating the fire and police department building out of the floodplain
2. This facility is governed by the town; the village does not have jurisdiction over it
3. The utilities at the village hall are elevated above the base flood elevation
4. The Village of Spencer reviewed the list of critical facilities and determined that schools are not critical for the purpose of essential services during a disaster. As a result, the village did not develop mitigation actions to protect those facility types to the 500-year flood level.

## Identified Issues

The municipality has identified the following vulnerabilities within their community:

- Stormwater flooding is a concern in some parts of the Village
- Many of the streams in the Village are trout streams and are regulated by NYSDEC. The Village cannot clear debris from them. If they could clear the debris and allow the stream to flow, it would help alleviate some of the flooding in the Village.
- Some areas of steep slopes
- Areas susceptible to flash flooding – creek in western part of the village
- Catatonk Creek – floods towards the southeastern portion of the village and agricultural areas – installed drainage in the area to help reduce flooding
- Updates to the bridge on Route 96 (done by state) – allows for more water to flow through and has reduced the flooding impacts to the village

### 9.14.5 Capability Assessment

This section identifies the following capabilities of the local jurisdiction:

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

## Planning and Regulatory Capability



The table below summarizes the regulatory tools that are available to the Village of Spencer.

**Table 9.14-6. Planning and Regulatory Tools**

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
<b>Planning Capability</b>				
Master Plan	Yes (1-2016)	Local	Planning Department	Master Plan
Capital Improvements Plan	Yes	County	Economic Development and Planning Department	Tioga County 2020 Strategic Plan
Floodplain Management / Basin Plan	Yes	Local	Planning Department	81
Stormwater Management Plan	Yes (5-2015)	County	Tioga County / Town of Owego 2015	2020 Stormwater Management Plan
Open Space Plan	No	-	-	-
Stream Corridor Management Plan	No	-	-	-
Watershed Management or Protection Plan	No	-	-	-
Economic Development Plan	No	-	-	-
Comprehensive Emergency Management Plan	Yes	Local	Mayor	Comprehensive Emergency Management Plan
Emergency Operation Plan	No	-	-	-
Post-Disaster Recovery Plan	No	-	-	-
Transportation Plan	No	-	-	-
Strategic Recovery Planning Report	No	-	-	-
Other Plans:	No	-	-	-
<b>Regulatory Capability</b>				
Building Code	Yes	State & Local	Code Enforcement	Building code of NY state
Zoning Ordinance	No	-	-	-
Subdivision Ordinance	No	-	-	-
NFIP Flood Damage Prevention Ordinance	Yes	Federal, State, Local	Code Enforcement	Chapter 81 of the Village Code. The Law was #1 of 1987, updated 2012.
NFIP: Cumulative Substantial Damages	No	-	-	-
NFIP: Freeboard	Yes	State, Local	Code Enforcement	State mandated BFE+2 for residential and non-residential construction
Growth Management Ordinances	No	-	-	-
Site Plan Review Requirements	Yes	Local	Joint Planning Board	Review for construction includes review for FEMA regulations and compliance.
Stormwater Management Ordinance	No	-	-	-



Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
Municipal Separate Storm Sewer System (MS4)	No	-	-	-
Natural Hazard Ordinance	No	-	-	-
Post-Disaster Recovery Ordinance	No	-	-	-
Real Estate Disclosure Requirement	Yes	State	-	NYS mandate, Property Condition Disclosure Act, NY Code - Article 14 §460-467
Other (Special Purpose Ordinances [i.e., sensitive areas, steep slope])	No	-	-	-

### Administrative and Technical Capability

The table below summarizes potential staff and personnel resources available to the Village of Spencer.

**Table 9.14-7. Administrative and Technical Capabilities**

Resources	Is this in place? (Yes or No)	Department/ Agency/Position
<b>Administrative Capability</b>		
Planning Board	Yes	Joint Town and Village
Mitigation Planning Committee	Yes	County
Environmental Board/Commission	No	-
Open Space Board/Committee	No	-
Economic Development Commission/Committee	No	-
Maintenance Programs to Reduce Risk	No	-
Mutual Aid Agreements	Yes	Tioga County Fire
<b>Technical/Staffing Capability</b>		
Planner(s) or engineer(s) with knowledge of land development and land management practices	Yes	County
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	Yes	Ken Sutfin
Planners or engineers with an understanding of natural hazards	No	-
NFIP Floodplain Administrator (FPA)	Yes	Mike Katchmir Code Enforcement
Surveyor(s)	No	-
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	Yes	County
Scientist familiar with natural hazards	No	-
Emergency Manager	No	-
Grant writer(s)	Yes	Ken Sutfin, Elaine Jardine, Gil Knapp
Staff with expertise or training in benefit/cost analysis	No	-
Professionals trained in conducting damage assessments	No	-

## Fiscal Capability

The table below summarizes financial resources available to the Village of Spencer.

**Table 9.14-8. Fiscal Capabilities**

Financial Resources	Accessible or Eligible to Use (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	No
Capital improvements project funding	No
Authority to levy taxes for specific purposes	No
User fees for water, sewer, gas or electric service	No
Impact fees for homebuyers or developers of new development/homes	No
Stormwater utility fee	No
Incur debt through general obligation bonds	No
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	No
Open Space Acquisition funding programs	No
Other	-

## Community Classifications

The table below summarizes classifications for community program available to the Village of Spencer.

**Table 9.14-9. Community Classifications**

Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	Through online courses	N/A
NYSDEC Climate Smart Community	No	-	-
Storm Ready Certification	Yes	County	-
Firewise Communities classification	No	-	-
Natural disaster/safety programs in/for schools	Yes	-	-
Organizations with mitigation focus (advocacy group, non-government)	No	-	-
Public education program/outreach (through website, social media)	Yes	Leverage outreach using website	-
Public-private partnership initiatives addressing disaster-related issues	No	-	-

Note:

N/A Not applicable  
 NP Not participating  
 - Unavailable

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

Criteria for classification credits are outlined in the following documents:

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

### Self-Assessment of Capability

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

**Table 9.14-10. Self-Assessment Capability for the Municipality**

Area	Degree of Hazard Mitigation Capability		
	Limited (If limited, what are your obstacles?)*	Moderate	High
Planning and regulatory capability	X - Staffing levels		
Administrative and technical capability	X - Experience		
Fiscal capability	X - Limited funds		
Community political capability		X	
Community resiliency capability		X	
Capability to integrate mitigation into municipal processes and activities		X	

### National Flood Insurance Program

#### NFIP Floodplain Administrator (FPA)

Mike Katchmir, Code Enforcement Officer

#### Flood Vulnerability Summary

The municipality maintains lists/inventories of properties that have been flood damaged and identifies property owners who are interested mitigation (e.g. elevation, acquisition). The FPA noted there are 8 residential properties that have experienced flooding. The FPA makes substantial damage estimates and has declared four properties as substantially damaged with approximately \$300,000.00 in damages. The FPA noted that none of the substantially damaged properties are interested in mitigation.

## Resources

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The FPA is the sole person responsible for floodplain. The FPA stated that NFIP administration services or functions include permit review, educations, and inspections. The FPA stated that Village provides education or outreach to those impacted by flooding regarding flood hazards/risk or flood risk reduction through NFIP insurance, mitigation, etc. The FPA feels there are some barriers to running an effective floodplain management program such as NY DEC and state waterway management policies as well as financial considerations. The FPA feels adequately supported and trained to fulfill their responsibilities as the municipal floodplain administrator. The FPA would consider attending continuing education and/or certification training on floodplain management if it were offered in the County for all local floodplain administrators.

## Compliance History

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The community in good-standing in the NFIP. According to NYSDEC, the Village had a compliance audit conducted on March 10, 2014. The Village maintains compliance with and good-standing in the NFIP including adoption and enforcement of floodplain management requirements (e.g. regulating all new and substantially improved construction in Special Hazard Flood Areas), floodplain identification and mapping, and flood insurance outreach to the community.

## Regulatory

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The FPA stated that floodplain management regulations/ordinances meet the FEMA and State minimum requirements. The Planning Board considers risk in order to support floodplain management. The Village has not considered joining the Community Rating System in the past but would like to learn more and would be interested in attending a seminar on the program if it were offered locally. The Village is undergoing the process to adopt higher regulatory standards to manage flood risk (i.e. increased freeboard, cumulative substantial damage/improvements).

## Integration of Hazard Mitigation into Existing and Future Planning Mechanisms

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

## Planning

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**Tioga County Hazard Mitigation Plan:** The Village of Spencer supports the implementation, monitoring, maintenance, and updating of the Tioga County Hazard Mitigation Plan. The Village attended hazard mitigation meetings throughout the 2018 update process.

**Master Plan:** The Village of Spencer has a Master/Comprehensive Plan (land-use plan). The plan includes areas of natural hazard risk (e.g. flood-prone areas, steep slopes) and refers to the Countywide Hazard Mitigation Plan.

**Comprehensive Emergency Management Plan:** The Village of Spencer has a Comprehensive Emergency Management Plan. The Plan refers to the Hazard Mitigation plan. The Village works to complete ongoing updates of the Comprehensive Emergency Management Plan.

## Regulatory and Enforcement (Ordinances)

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The Planning Board and Code Enforcement Officer ensures that the Village's regulatory standards are kept current with the state's standards and requirements. Additionally, the Code Enforcement Officer is currently



working to change laws on property maintenance. Some of the laws in the Village are outdated and need to be updated.

**Zoning, Subdivision, and Site Plan Review:** The Village of Spencer’s municipal zoning and subdivision regulations, and site plan review ordinance consider natural hazard risk (e.g. the presence of floodplains, steep slopes, etc.) and require developers to take additional actions to mitigate natural hazard risk (e.g. undergrounding utilities, stormwater detention, creating easements in areas/zones of hazard risk). The Planning Board is provided with contour maps, DEC assessments, county GIS and planning resources to guide their decisions with respect to natural hazard risk management.

**Flood Damage Prevention Ordinance:** The Village of Spencer’s NFIP Flood Damage Protection Ordinance (Chapter 81 of the Village Code) meets the minimum Federal and State NFIP regulatory requirements.

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### Operational and Administration

The NFIP Floodplain Management functions in the Village are carried out by the Code Enforcement Officer. The Village of Spencer does not have a municipal planner or contract planning firm. The Village has a Planning Board that takes into account risk when making decisions. The Planning Board and Code Enforcement Officer ensures proper steps are taken to regulate new construction. They also make flood insurance information available to the public.

The Village does not have any other Boards or Committees that include functions with respect to managing natural hazard risk. The Village does have staff or contract with firms that have experience with developing Benefit-Cost Analysis. Staff perform Substantial Damage Estimates when they are applicable to demolition and building in the flood zone. The Village has board members and other personnel that have experience in preparing grant applications. Village staff do not receive training or continuing professional education which supports natural hazard risk reduction. The FPA indicated that the Village does not have other hazard management programs in place such as vegetation management.

According to the FPA, no Village staff have job descriptions that specifically include identifying and/or implementing mitigation projects/actions or other efforts to reduce natural hazard risk, but staff do belong to State and local Code groups that support natural hazard risk reduction and build hazard management capabilities.

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### Funding

The Village of Spencer’s municipal/operating budget does not include line items for mitigation projects/activities. The Village does not have a Capital Improvements. The Village has not pursued or been awarded grant funds for mitigation-related projects and does not have any other mechanisms to fiscally support hazard mitigation projects.

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### Education and Outreach

The Village has information available in the code enforcement office to inform citizens on natural hazards (e.g. safe use of generators, emergency preparedness, flood hazard information). The FPA noted that use of the website and public training sessions could enhance public outreach and education efforts. It should be noted that the Village is constantly updating their municipal website and provides information packets regarding natural hazard risk to residents. The packets are available in the municipal office.



### Sheltering, Evacuation, and Temporary Housing

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

Tioga County, through a buildable land analysis, has identified areas suitable for placing temporary and permanent housing. Refer to Section 4.7.5 in Section 4 (County Profile) of Volume 1 of this plan for a description of resources identified by the county to support municipalities with the identification of evacuation, sheltering, and temporary and permanent housing. Each year, during the annual HMP progress meeting, the municipality will discuss their progress in identifying shelters, evacuation routes, and temporary and permanent housing for their community.

### Temporary Housing and Long-Term Relocation

The Village of Spencer has not identified potential sites for the placement of temporary housing for residents displaced by a disaster or potential site suitable for relocating houses of the floodplain and/or building new homes once properties in the floodplain are acquired.

### Evacuation and Sheltering Needs

The Village of Spencer identified the Middle School at 1 Center Street and the Fire Station at 41 Main Street as designated emergency shelters. The capacity of the Middle School is not known but it is ADA compliant, has backup power, provides minor medical services, and has a kitchen. The School does not accommodate pets. The Fire Station has a capacity of 100 and accommodates pets. It is ADA compliant, has backup power, provides minor medical services, and has a kitchen.

### 9.14.6 Mitigation Strategy and Prioritization

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

### Past Mitigation Initiative Status

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

**Table 9.14-11. Status of Previous Mitigation Actions**

Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
						Cost		
1	Perform a study of the "overflow ponds" parallel to Main St. near the creek to prevent stagnant water. Work with towns upstream to attenuate this problem.	Flood	Study is needed to understand the stagnant water accumulation	Town Floodplain Administrator with County support	In Progress		-	1. Include in the 2018 HMP Monitor the berms and water control structure to ensure proper function of overflow ponds parallel to Main Street near the creek. 2. - 3. -
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
2	Continue to support elevation of home in Owego Street area via HMPG grant.	Flood	Homes below the BFE are vulnerable to flood damages.	Town Floodplain Administrator with County support	Complete	Cost	\$0	1. Discontinue. 2. - 3. The Village worked with the homeowners to begin the elevation process of homes in the Owego Street area of the village. However, the wording of the FEMA agreement made homeowners uneasy and they chose not to elevate their homes.
						Level of Protection	N/A – homeowners did not elevate	
						Damages Avoided; Evidence of Success	N/A – homeowners did not elevate	
3	Retrofit structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority. Address Village EOC and Fire Department. The Village Hall building is located near the creek. Water has encroached up to the building. The fire department is in the same building and does not have anywhere to expand to. New trucks and	Flood, Severe Storm, Earthquake	The Village Hall building is located near the creek. Water has encroached up to the building. The fire department is in the same building and does not have anywhere to expand to. New trucks and equipment would not be	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	In Progress	Cost	-	1. Include in 2018 HMP Floodproofing Village of Spencer 2. Municipal Building – see V. Spencer-1 in Table 9.14-12 3. -
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	





Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. 3. If discontinue, explain why.
	<p>equipment would not be able to be stored there due to the small space. The office needs various security updates and could be at risk of flooding as well. The library is also located within the same building</p> <p>Phase 1: Identify appropriate candidates for retrofitting based on cost-effectiveness versus relocation.</p> <p>Phase 2: Where retrofitting is determined to be a viable option, work with property owners toward implementation of that action based on available funding from FEMA and local match availability.</p>		<p>able to be stored there due to the small space. The office needs various security updates and could be at risk of flooding as well. The library is also located within the same building</p>					
4	<p>Purchase, or relocate structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority.</p> <p>Phase 1: Identify appropriate candidates for relocation based on cost-effectiveness versus retrofitting.</p> <p>Phase 2: Where relocation is determined to be a viable option,</p>	Flood, Severe Storm	<p>Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA</p>		Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. Ongoing Capability – the Village continues to work with RL and SRL properties and other floodprone structures. If the owner shows interest in mitigation, the Village will assist.



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. 3. If discontinue, explain why.
	work with property owners toward implementation of that action based on available funding from FEMA and local match availability.							
5	Maintain compliance with and good-standing in the NFIP including adoption and enforcement of floodplain management requirements (e.g. regulating all new and substantially improved construction in Special Hazard Flood Areas), floodplain identification and mapping, and flood insurance outreach to the community. Further, continue to meet and/or exceed the minimum NFIP standards and criteria through the following NFIP-related continued compliance actions identified as Initiatives 6 – 14 (below).	Flood, Severe Storms	This is an ongoing capability for the Village. Refer to 'Integration of Hazard Mitigation into Existing and Future Planning Mechanisms' above.	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, ISO FEMA	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2.
						Damages Avoided; Evidence of Success	-	3. Ongoing capability - Attend Hazard Mitigation Meetings and maintain communication to ensure constant readiness increase a situation arises. Planning Board and code enforcement ensures proper steps are taken to regulate new construction. Make flood insurance information available to public.
6	Begin the process to adopt higher regulatory standards to manage flood risk (i.e. increased freeboard, cumulative substantial damage/improvements).	Flood, Severe Storms	This is an ongoing capability for the Village. Refer to 'Integration of Hazard Mitigation into Existing and Future Planning Mechanisms' above.	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2.
						Damages Avoided; Evidence of Success	-	3. Ongoing capability - the Planning Board and Code Enforcement keeps with state standards

Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps
						Cost		
7	Conduct and facilitate community and public education and outreach for residents and businesses to include, but not be limited to, the following to promote and effect natural hazard risk reduction: Provide and maintain links to the HMP website, and regularly post notices on the County/municipal homepage(s) referencing the HMP webpages. Prepare and distribute informational letters to flood vulnerable property owners and neighborhood associations, explaining the availability of mitigation grant funding to mitigate their properties, and instructing them on how they can learn more and implement mitigation. Use email notification systems and newsletters to better educate the public on flood insurance, the availability of mitigation grant funding, and personal natural hazard risk reduction measures. Work with neighborhood associations, civic and business groups to disseminate information	All Hazards	This is an ongoing capability for the Village. Refer to 'Integration of Hazard Mitigation into Existing and Future Planning Mechanisms' above.	Municipality with support from Planning Partners, NYSOEM, FEMA	Ongoing Capability	Level of Protection	-	<ol style="list-style-type: none"> <li>1. Discontinue</li> <li>2. -</li> <li>3. This is part of the day-to-day operations of the Village. The Village is constantly updating their municipal website and provides information packets regarding natural hazard risk to residents. The packets are available in the municipal office.</li> </ol>
						Damages Avoided; Evidence of Success	-	



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. 3. If discontinue, explain why.
	on flood insurance and the availability of mitigation grant funding.							
8	Have designated NFIP Floodplain Administrator (FPA) become a Certified Floodplain Manager through the ASFPM and pursue relevant continuing education training such as FEMA Benefit-Cost Analysis.	Flood, Severe Storms	Not applicable – FPA is a CFM	NFIP Floodplain Administrator	Complete	Cost		1. Discontinue
						Level of Protection	Our flood plain manager is certified and attends yearly education to maintain certification	2.
						Damages Avoided; Evidence of Success		3. Complete
9	Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Section 7.0	All Hazards	This is an ongoing capability for the Village. Refer to 'Integration of Hazard Mitigation into Existing and Future Planning Mechanisms' above.	Municipality (via mitigation planning point of contacts) with support from Planning Partners (through their Points of Contact), NYSOEM	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. Ongoing capability
10	Complete the ongoing updates of the Comprehensive Emergency Management Plans	All Hazards	This is an ongoing capability for the Village. Refer to 'Integration of Hazard Mitigation into Existing and Future Planning Mechanisms' above.	Municipality with support from NYSOEM	Ongoing Capability	Cost	-	1. Discontinue
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. Ongoing capability



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
						Cost		
11	Create/enhance/maintain mutual aid agreements with neighboring communities for continuity of operations	All Hazards		Municipality with support from Surrounding municipalities and County	In Progress	Level of Protection		1. Include in 2018 HMP 2. 3.
						Damages Avoided; Evidence of Success		
12	Identify and develop agreements with entities that can provide support with FEMA/SOEM paperwork after disasters; qualified damage assessment personnel – Improve post-disaster capabilities – damage assessment; FEMA/SOEM paperwork compilation, submissions, record-keeping	All Hazards	Need to improve post disaster capabilities in the village	Municipality with support from County, NYSOEM, FEMA	In Progress	Cost		1. Include in 2018 HMP 2. 3.
						Level of Protection		
						Damages Avoided; Evidence of Success		
13	Work with regional agencies (i.e. County and SOEM) to help develop damage assessment capabilities at the local level through such things as training programs, certification of qualified individuals (e.g. code officials, floodplain managers, engineers).	All Hazards	This is an ongoing capability for the Village. Refer to 'Integration of Hazard Mitigation into Existing and Future Planning Mechanisms' above.	Municipality with support from County, NYSOEM	Ongoing Capability	Cost	-	1. Discontinue 2. - 3. Ongoing Capability - Code Enforcement and Flood Plain Manager receive constant training
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
14	Participate in local, county and/or state level projects and programs to develop improved structure and facility inventories and hazard datasets to support enhanced risk assessment	All Hazards		HMP Coordinator	In Progress	Cost		1. Include in 2018 HMP 2. 3.
						Level of Protection		
						Damages Avoided; Evidence of Success		



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. 3. If discontinue, explain why.
	efforts. Such programs may include developing a detailed inventory of critical facilities based upon FEMA's Comprehensive Data Management System (CDMS) which could be used for various planning and emergency management purposes including: Support the performance of enhanced risk and vulnerability assessments for hazards of concern. Support state, county and local planning efforts including mitigation (including updates to the State HMP), comprehensive emergency management, debris management, and land use. Improved structural and facility inventories could incorporate flood, wind and seismic-specific parameters (e.g. first floor elevations, roof types, structure types based on FEMA-154 "Rapid Visual Screening of Buildings for Potential Seismic Hazards" methodologies). It is recognized that these programs will need to be initiated and supported at the County and/or State							



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. 3. If discontinue, explain why.
	level, and will require training, tools and funding provided at the county, state and/or federal level.							



### Completed Mitigation Initiatives Not Identified in the Previous Mitigation Strategy

The Village of Spencer has performed ongoing maintenance projects to reduce the impact of flooding but has not identified specific mitigation projects/activities that have been completed but were not identified in the previous mitigation strategy in the 2013 Plan.

### Proposed Hazard Mitigation Initiatives for the Plan Update

The Village of Spencer participated in a mitigation action workshop on July 11, 2018 and was provided the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 ‘Selecting Appropriate Mitigation Measures for Floodprone Structures’ (March 2007) and FEMA ‘Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards’ (January 2013).

Table 9.14-12 summarizes the comprehensive-range of specific mitigation initiatives the Village of Spencer would like to pursue in the future to reduce the effects of hazards. Some of these initiatives may be previous actions carried forward for this plan update. These initiatives are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. The four FEMA mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

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

Table 9.14-13 provides a summary of the prioritization of all proposed mitigation initiatives for the Plan update.



Table 9.14-12. Proposed Hazard Mitigation Initiatives

Project Number	Project Name	Description of the Problem	Description of the Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues?	Estimated Timeline	Lead and Support Agencies	Estimated Cost	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category
V. Spencer-1 (previous action #3)	Floodproofing Village of Spencer Municipal Building	See Action Worksheet	See Action Worksheet	Flood	1-1, 1-2, 1-9	Yes	No	Two Years	Village Fire Department, Village Board	\$1 million	Protect the village offices and library and their equipment and important village records from being destroyed. The Municipal Building serves as the Village Operation Center during times of emergencies. Preserve a historic structure.	FEMA HMA Grants	High	SIP
V. Spencer-2	Catatonk Creek Drainage Improvement	See Action Worksheet	See Action Worksheet	Flood, Severe Storm	1-1, 1-2, 1-5	No	No	1 Year	Village Maintenance Department	\$1 million	Continue flood losses and damage to properties in the area would be reduced and/or eliminated.	Soil and Water Annual Spring Stream Clean-up Program	High	SIP, NSP
V. Spencer-3 (previous action #1)	Monitoring and cleaning of overflow ponds parallel to Main Street	A study was performed on the overflow ponds in the Village; however, a monitoring program is not in place to ensure the proper	Monitor the berms and water control structure to ensure proper function of overflow ponds parallel to Main Street near the creek. Additionally,	Flood, Severe Storm	1-1, 1-2, 1-5	No	No	1 Year	Village Maintenance Department	<\$10,000	Continue flood losses and damage to properties in the area would be reduced and/or eliminated.	Municipal Budget	Medium	NSP





## SECTION 9.14: VILLAGE OF SPENCER

Project Number	Project Name	Description of the Problem	Description of the Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues?	Estimated Timeline	Lead and Support Agencies	Estimated Cost	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category
			develop a maintenance program to remove silt and debris from ponds to keep them working properly											
V. Spencer-4	Mutual Aid Agreements	Currently have mutual aid agreements with surrounding neighborhoods; however, the Village would like to enhance those agreements	Work with existing mutual aid agreements and update/enhance accordingly. Identify other communities where the village can create new agreements.	All	All	No	No	Within 5 years	Village Board	No cost other than municipal time	Increase support to village during emergencies; enhance life and safety protection measurements	Municipal Budget	Medium	LPR
V. Spencer-5	Participation in programs to develop improved structure and facility inventories	While the Village does provide support to federal, state and county agencies, their participation can be improved and enhanced to increase the village's capabilities.	Working with federal, state and county agencies, the Village will support the performance of enhanced risk and vulnerability assessments for hazards of concern; support the update of the County's CEMP and HMP; and update their infrastructure inventories to incorporate flood and wind parameters.	All	1, 2, 5	No	No	Within 5 Years	Village Board	<\$10,000	Enhance relationship with federal, state and county agencies;	Municipal Budget, FEMA HMA grants where applicable	Medium	LPR



Project Number	Project Name	Description of the Problem	Description of the Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues?	Estimated Timeline	Lead and Support Agencies	Estimated Cost	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category
V. Spencer-6	Critical Facility Outreach	There are two critical facilities owned by the Town of Spencer that are located in the 1% annual chance flood area. It is unknown if these structures are mitigated to protect it against a 500-year event.	The Village of Spencer will notify the Town of Spencer that the highway garage and town hall are located in the 1% annual chance flood area. The Village will provide mitigation options to the Town to	Flood	1, 6	Yes	No	Within 1 year	Village Floodplain Administrator	Staff Time	Provide outreach to the property owner and informing them of potential flood damage and possible solutions	Municipal Budget	Medium	SIP, EAP

**Notes:**

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

**Acronyms and Abbreviations:**

CAV	Community Assistance Visit
CRS	Community Rating System
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
FPA	Floodplain Administrator
HMA	Hazard Mitigation Assistance
N/A	Not applicable
NFIP	National Flood Insurance Program
OEM	Office of Emergency Management

**Potential FEMA HMA Funding Sources:**

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

**Timeline:**

The time required to complete the project

**Cost:**

Estimated costs associated with implementation

**Benefits:**

The benefits that implementation of this project will provide.

**Mitigation Category:**

- Local Plans and Regulations (LPR) – These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.
- Structure and Infrastructure Project (SIP) - These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.
- Natural Systems Protection (NSP) – These are actions that minimize damage and losses, and also preserve or restore the functions of natural systems.



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

**Critical Facility:**

- Yes 💧 - Critical Facility located in 1% floodplain



Table 9.14-13. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
V. Spencer-1 (previous action #3)	Floodproofing Village of Spencer Municipal Building	1	1	1	1	0	1	1	0	1	1	0	1	1	1	11	High
V. Spencer-2	Catatonk Creek Drainage Improvement	1	1	1	1	0	1	1	0	1	1	1	1	0	1	11	High
V. Spencer-3 (previous action #1)	Monitoring and cleaning of overflow ponds parallel to Main Street	1	1	1	1	0	1	0	0	1	0	1	1	0	0	8	Medium
V. Spencer-4	Mutual Aid Agreements	1	1	1	1	0	0	1	0	1	1	1	0	0	0	8	Medium
V. Spencer-5	Participation in programs to develop improved structure and facility inventories	1	1	1	1	0	1	1	0	1	0	1	0	0	0	8	Medium
V. Spencer-6	Critical Facility Outreach	0	1	1	1	0	0	1	1	1	0	0	0	1	1	8	Medium

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



#### **9.14.7 Future Needs To Better Understand Risk/Vulnerability**

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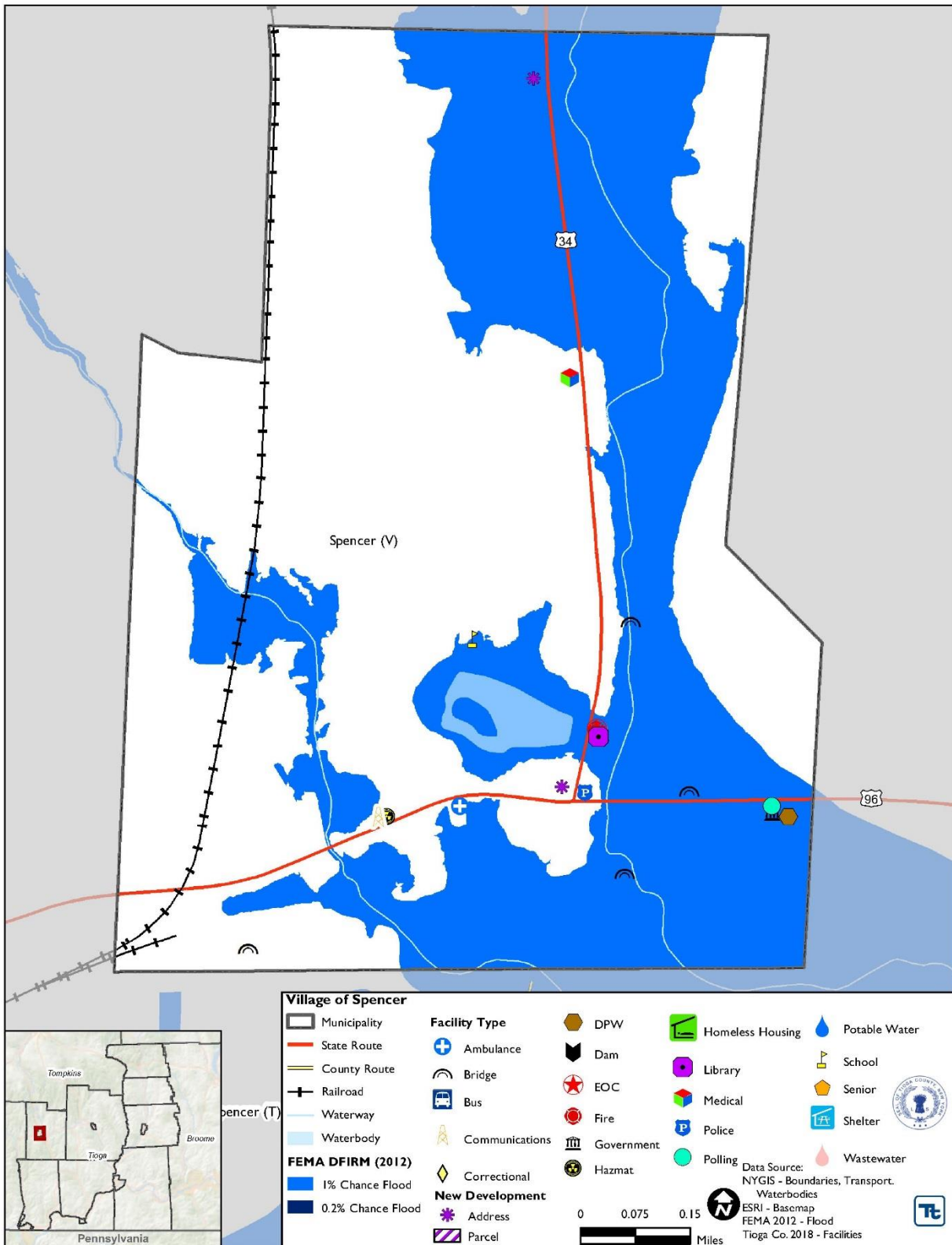
None at this time.

#### **9.14.8 Hazard Area Extent and Location**

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

Figure 9.14-1. Village of Spencer Hazard Area Extent and Location





Village of Spencer Action Worksheet			
<b>Project Name:</b>	Floodproofing Village of Spencer Municipal Building		
<b>Project Number:</b>	V. Spencer-1		
<b>Risk / Vulnerability</b>			
<b>Hazard(s) of Concern:</b>	Flood		
<b>Description of the Problem:</b>	The Village Municipal Building is located in the floodplain along Owego Street near Catatonk Creek. The Municipal Building complex includes the Village offices, library and fire station. Over the years the creek has been filled with tree branches and other large debris that reduces the holding capacity of the creek. During major rain storm the creek overflows, flooding the roadway, parking lot as well as creating some minor flooding issues at the Building.		
<b>Action or Project Intended for Implementation</b>			
<b>Description of the Solution:</b>	The Village is in the process of constructing a new Fire Station out of the floodplain, however, it is not feasible to relocate the municipal building and library. Several mitigation related solutions were considered, the best solution recommended is to floodproofing the existing Municipal Building and library. The project would involve elevating utilities and water tighten of exterior of structures to the 500-year flood event level.		
<b>Is this project related to a Critical Facility?</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
<b>Is this project related to a Critical Facility located within the 100-year floodplain?</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
<b>Level of Protection:</b>	500-year	<b>Estimated Benefits (losses avoided):</b>	Protect the village offices and library and their equipment and important village records from being destroyed. The Municipal Building serves as the Village Operation Center during times of emergencies. Preserve a historic structure.
<b>Useful Life:</b>	30 years		
<b>Estimated Cost:</b>	\$1 million		
<b>Plan for Implementation</b>			
<b>Prioritization:</b>	High (1)	<b>Desired Timeframe for Implementation:</b>	2 years
<b>Estimated Time Required for Project Implementation:</b>	2 years	<b>Potential Funding Sources:</b>	FEMA HMA Grants
<b>Responsible Organization:</b>	Village Fire Department	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	Hazard Mitigation Plan
<b>Three Alternatives Considered (including No Action)</b>			
<b>Alternatives:</b>	<b>Action</b>	<b>Estimated Cost</b>	<b>Evaluation</b>
	No Action	\$0	Problem will continue
	Relocate Municipal Building and Library	\$6-8 million	The Municipal Building serves as the Village center and to move these facilities will change the charter of the Village.
	Acquire and demo the existing building	\$6-10 million	The Municipal Building serves as the Village center and to move these facilities will change the charter of the Village.
<b>Progress Report (for plan maintenance)</b>			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			



Village of Spencer Action Worksheet		
<b>Project Name:</b>	Floodproofing Village of Spencer Municipal Building	
<b>Project Number:</b>	V. Spencer-1	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	Project will protect the municipal complex which houses village offices, library, and fire station.
Cost-Effectiveness	1	
Technical	1	
Political	0	
Legal	1	Project area within Village of Spencer
Fiscal	1	FEMA HMA Grants
Environmental	0	
Social	1	
Administrative	1	Work will be performed by Village Fire Department
Multi-Hazard	0	
Timeline	1	Project can be implemented in 2 years.
Agency Champion	1	
Other Community Objectives	1	Hazard Mitigation Plan
<b>Total</b>	11	
<b>Priority (High/Med/Low)</b>	High	





Village of Spencer Action Worksheet			
<b>Project Name:</b>	Catatonk Creek Drainage Improvement		
<b>Project Number:</b>	V. Spencer 2		
<b>Risk / Vulnerability</b>			
<b>Hazard(s) of Concern:</b>	Flooding		
<b>Description of the Problem:</b>	Over the years Catatonk Creek near Owego and Water Street has been filled with tree branches and other large debris that reduces the holding capacity of the creek. During major rain storm events the creek overflows, flooding the roadway, homes and causing other property damage along Owego and Water Street. The Creek needs to be dredged and clean to increase its holding capacity for 10-year flooding event. The Village has 2 repetitive loss structures and both are located in this area.		
<b>Action or Project Intended for Implementation</b>			
<b>Description of the Solution:</b>	Removal of the debris to increase creek holding capacity. The Village will partner with the Soil and Water and participate in their annual spring stream clean-up program. The program is designed to work with communities and other groups to clean and remove debris from the creeks.		
<b>Is this project related to a Critical Facility?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
<b>Is this project related to a Critical Facility located within the 100-year floodplain?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
<b>Level of Protection:</b>	500-year	<b>Estimated Benefits (losses avoided):</b>	Continue flood losses and damage to properties in the area would be reduced and/or eliminated.
<b>Useful Life:</b>	50 years		
<b>Estimated Cost:</b>	\$1 million		
<b>Plan for Implementation</b>			
<b>Prioritization:</b>	High (2)	<b>Desired Timeframe for Implementation:</b>	1 year
<b>Estimated Time Required for Project Implementation:</b>	2 weeks	<b>Potential Funding Sources:</b>	Soil and Water Annual Spring Stream Clean-up Program
<b>Responsible Organization:</b>	Village Maintenance Department	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	Hazard Mitigation Plan
<b>Three Alternatives Considered (including No Action)</b>			
<b>Alternatives:</b>	<b>Action</b>	<b>Estimated Cost</b>	<b>Evaluation</b>
	No Action	\$0	Problem will continue
	Dredge the creek	\$500.00	The creek is protected waters under DEC programs and will require major permits.
	Acquire and demo at least 5 homes in area	\$1- million	Eliminate flood losses and damage to properties in the area and return land to its natural and beneficial uses.
<b>Progress Report (for plan maintenance)</b>			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			



Village of Spencer Action Worksheet		
<b>Project Name:</b>	Catatonk Creek Drainage Improvement	
<b>Project Number:</b>	V. Spencer 2	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
<b>Life Safety</b>	1	Repetitive loss properties located within the floodplain
<b>Property Protection</b>	1	Project will reduce vulnerability of repetitive loss structures within the flood hazard area
<b>Cost-Effectiveness</b>	1	
<b>Technical</b>	1	
<b>Political</b>	0	
<b>Legal</b>	1	Project area within Village of Spencer
<b>Fiscal</b>	1	Soil and Water Annual Spring Stream Clean-up Program
<b>Environmental</b>	0	
<b>Social</b>	1	
<b>Administrative</b>	1	Project will be performed by Village Maintenance Department
<b>Multi-Hazard</b>	1	Flood and Severe Storm
<b>Timeline</b>	1	Project can be implemented in 1 years.
<b>Agency Champion</b>	0	
<b>Other Community Objectives</b>	1	Hazard Mitigation Plan
<b>Total</b>	11	
<b>Priority (High/Med/Low)</b>	High	



Tioga County Jurisdictional Annex Review Sign-Off Sheet  
Signatures indicate review of annex content by the municipal official

Village of Spencer

MUNICIPALITY NAME

Mayor/Administrator/Supervisor

Kenneth Suttin

Name

[Signature]

Signature

11-15-18

Date

Fiscal/CFO

Brandi Goodrich

Name

[Signature]

Signature

11-15-18

Date

Building Code Official

Michael Karchner CAO

Name / Title

[Signature]

Signature

11/14/18

Date

Floodplain Administrator

Michael Karchner CAO

Name / Title

[Signature]

Signature

11/14/18

Date

Emergency Manager

Kenneth Suttin Mayor

Name / Title

[Signature]

Signature

11-15-18

Date

Land Use Planner

Name / Title

Signature

Date

Public Works Director

Name / Title

Signature

Date

Highway Superintendent

Name / Title

Signature

Date

Police Department

Name / Title

Signature

Date

Fire Department

Chief Andrew Speer Fire Chief

Name / Title

[Signature]

Signature

11/15/18

Date

## 9.15 TOWN OF TIOGA

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



2010 Population: 4,871  
Population in 100 year Floodplain (SFHA): 609

Land Area: 37,982 acres  
Land Area in Floodplain: 7.7%  
NFIP policies: 47  
NFIP Policies in SFHA: 36  
NFIP Claims: 124  
Total NFIP Losses: \$3.466 million



Number of Buildings: 2,162  
Total Replacement Building Value: \$618.9 million  
Number of Buildings in the SFHA: 237  
Total Replacement Building Value Exposed in the SFHA: \$78.3 million

Mitigation Focus  
Flood



### 9.15.1 Hazard Mitigation Plan Point of Contact

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

Primary Point of Contact	Alternate Point of Contact
Lewis Zorn, Supervisor Phone: 607-658-6990 Cell: 607-687-0241 Email: <a href="mailto:lzorne@verizon.net">lzorne@verizon.net</a>	Robert Strong, Deputy Supervisor Phone: 607-699-3034

## 9.15.2 Municipal Profile

The Town of Tioga is in Tioga County, New York. The town is in the southwest part of the county and lies between Elmira and Binghamton. According to the U.S. Census Bureau, the town has a total area of 59.5 square miles, of which, 58.7 square miles of it is land and 0.8 square miles of it (1.31%) is water. The Susquehanna River forms the south town boundary; the Town and Village of Owego are to the east, the Town of Candor to the north, and the Town of Barton to the west. New York State Route 17C follows the course of the Susquehanna on its north bank.

The town is governed by the town supervisor and council members. According to the 2010 Census, the community's population was 4,871.

## Growth/Development Trends

The following table summarizes recent residential/commercial development since 2012 to present and any known or anticipated major residential/commercial development and major infrastructure development that has been identified in the next five years within the municipality. Refer to the map in 9.15.8 of this annex which illustrates the hazard areas along with the location of potential new development.

**Table 9.15-1. Growth and Development**

Property or Development Name	Type (e.g. Res., Comm.)	# of Units / Structures	Location (address and/or Parcel ID)	Known Hazard Zone(s)	Description/Status of Development
<b>Recent Development from 2012 to present</b>					
3044-172	Res	1	3044-172	Could Not Locate	Elevated 2' above BFE
3042-172	Res	1	3042-172	Could Not Locate	Elevated 2' above BFE
Fifth Ave 2	Res	1	Fifth Ave 2	1% Annual Chance Flood Event	Elevated 2' above BFE
Fifth Ave 18	Res	1	Fifth Ave 18	1% Annual Chance Flood Event	Elevated 2' above BFE
50 Beardlee	Res	1	50 Beardlee	1% Annual Chance Flood Event	Elevated 2' above BFE
<b>Known or Anticipated Development in the Next Five (5) Years</b>					
5 Locust	Res	1	5 Locust	1% Annual Chance Flood Event	Elevated 2' above BFE

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

## 9.15.3 Natural Hazard Event History Specific to the Municipality

Tioga County has a history of natural and non-natural hazard events as detailed in Volume I, Section 5.0 of this plan. A summary of historical events is provided in each of the hazard profiles and includes a chronology of events that have affected the County and its municipalities. For the purpose of this plan update, events that have occurred in the County from 2012 to December 31, 2017 were summarized to indicate the range and impact of hazard events in the community. Information regarding specific damages is included, if available, based on reference material or local sources. This information is presented in the table below. For details of these and additional events, refer to Volume I, Section 5.0 of this plan.

**Table 9.15-2. Hazard Event History**

Dates of Event	Event Type (Disaster Declaration if applicable)	Tioga County Designated?	Summary of Damages/Losses
March 2017	Snowstorm	Yes	Snow removal with overtime.
July 23, 2017	Flash Flood	Yes	Flood damages approximately \$500,000 for infrastructure repair.

Notes:

EM Emergency Declaration (FEMA)

FEMA Federal Emergency Management Agency

DR Major Disaster Declaration (FEMA)

N/A Not applicable

### 9.15.4 Hazard Vulnerabilities and Ranking

The hazard profiles in Section 5.0 of this plan have detailed information regarding each plan participant's vulnerability to the identified hazards. This section provides a summary of exposure and impacts from significant hazards of concern as identified by the Town of Tioga. For additional vulnerability information relevant to this jurisdiction, refer to Section 5.0.

#### Natural Hazard Risk/Vulnerability Risk Ranking

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

As discussed in Section 5.3 (Hazard Ranking), each participating town or village may have differing degrees of risk exposure and vulnerability compared to Tioga County as a whole. Therefore, each municipality ranked the degree of risk to each hazard as it pertains to their community. The table below summarizes the hazard risk/vulnerability rankings of potential natural hazards for the Town of Tioga. The Town of Tioga has reviewed the County hazard risk/vulnerability risk ranking table as well as its individual results to reflect the relative risk of the hazards of concern to the community.

During the review of the hazard/vulnerability ranking, the community indicated that Drought is considered a low hazard due to the lack of impact on Town residents, property and the economy. The ranking for the Severe Storm Hazard was adjusted to Low as historically the Town has been able to address storm impacts which were not severe. Additionally the Town adjusted the Severe Winter Hazard to Medium as the town is well prepared for winter weather.

**Table 9.15-3. Hazard Risk/Vulnerability Risk Ranking**

Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard <sup>a, b, c</sup>		Probability of Occurrence	Hazard Ranking
Drought	Damage estimate not available		Frequent	Low*
Flood	RCV Exposed to 1% Annual Chance Flood Event	\$50,914,000	Frequent	High
Severe Storm	100-year MRP	\$0	Frequent	Medium*
	500-year MRP	\$13,420		



Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard <sup>a, b, c</sup>		Probability of Occurrence	Hazard Ranking
Severe Winter Weather	1% GBS	\$3,817,400	Frequent	Medium*
	5% GBS	\$19,087,000		

Notes:

\* Municipality adjusted the hazard ranking

a. Building damage ratio estimates based on FEMA 386-2 (August 2001)

b. Loss estimates for the severe storm and severe winter storm hazards are structural values only and do not include the value of contents.

c. Loss estimates for the flood hazard represents both structure and contents.

### National Flood Insurance Program (NFIP) Summary

The following table summarizes the NFIP statistics for the Town of Tioga.

**Table 9.15-4. NFIP Summary**

Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 100-year Boundary (3)
Tioga (T)	47	124	\$3,466,230.00	18	5	36

Source: FEMA 2018

1. Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA and are current as of February 28, 2018 and are summarized by Community Name. Please note the total number of repetitive loss properties excludes the severe repetitive loss properties. The number of claims represents claims closed by 2/28/2018 Total building and content losses from the claims file provided by FEMA Region 2.
2. Total building and content losses from the claims file provided by FEMA Region 2.

### Critical Facilities Flood Risk

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

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



**Table 9.15-5. Potential Flood Losses to Critical Facilities**

Name	Type	Exposure		Potential Loss from 1% Flood Event		Addressed by Proposed Action
		1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	
Tioga County Highway Department	Comm Tower		X	-	-	-
Tioga County Public Works & Highway Department	Government		X	-	-	-
Tioga Central Middle School	Shelter		X	-	-	-

Source: Tioga County GIS, FEMA 2012, and Hazus 4.2

Note: The fire station was originally listed as being located in the floodplain; the Town's floodplain administrator confirmed it is not in the floodplain and the fire station was removed from this list.

### Identified Issues

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

- All municipalities within the Susquehanna flood plain. Any roadways or areas located near a stream
- Properties in low lying areas, next to streams, creeks or rivers.

### 9.15.5 Capability Assessment

This section identifies the following capabilities of the local jurisdiction:

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

### Planning and Regulatory Capability

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

**Table 9.15-6. Planning and Regulatory Tools**

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
<b>Planning Capability</b>				
Master Plan	Yes	Local	Planning Board	2017
Capital Improvements Plan	No	-	-	-
Floodplain Management / Basin Plan	No	-	-	-
Stormwater Management Plan	No	-	-	-
Open Space Plan	No	-	-	-





Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
Stream Corridor Management Plan	No	-	-	-
Watershed Management or Protection Plan	No	-	-	-
Economic Development Plan	Yes	County	Economic Development and Planning Department	Tioga County 2020 Strategic Plan
Comprehensive Emergency Management Plan	Yes	County	Emergency Services	Tioga County
Emergency Operation Plan	Yes	Local	Code Enforcement	2012
Post-Disaster Recovery Plan	No	-	-	-
Transportation Plan	No	-	-	-
Strategic Recovery Planning Report	No	-	-	-
Other Plans:	Yes	County and Local	Planning	New York Rising Community Reconstruction Plan
<b>Regulatory Capability</b>				
Building Code	Yes	State & Local	Code Enforcement Officer	2012
Zoning Ordinance	No	-	-	-
Subdivision Ordinance	Yes	Local	Planning Board	May 11, 1999
NFIP Flood Damage Prevention Ordinance	Yes	Federal, State, Local	Code Official	Not available at time of plan update
NFIP: Cumulative Substantial Damages	No	-	-	-
NFIP: Freeboard	Yes	State, Local	Code Official	State mandated BFE+2, both residential and non-residential
Growth Management Ordinances	No	-	-	-
Site Plan Review Requirements	Yes	Local	Planning Board	March 10, 2012
Stormwater Management Ordinance	No	-	-	-
Municipal Separate Storm Sewer System (MS4)	No	-	-	-
Natural Hazard Ordinance	No	-	-	-
Post-Disaster Recovery Ordinance	No	-	-	-
Real Estate Disclosure Requirement	Yes	State	NYS Department of State, Real Estate Agent	NYS mandate, Property Condition Disclosure Act, NY Code - Article 14 §460-467
Other (Special Purpose Ordinances [i.e., sensitive areas, steep slope])	No	-	-	-

## Administrative and Technical Capability

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

**Table 9.15-7. Administrative and Technical Capabilities**

Resources	Is this in place? (Yes or No)	Department/ Agency/Position
<b>Administrative Capability</b>		
Planning Board	Yes	Planning Board
Mitigation Planning Committee	No	-
Environmental Board/Commission	No	-
Open Space Board/Committee	No	-
Economic Development Commission/Committee	No	-
Maintenance Programs to Reduce Risk	Yes	Routine Highway Department Task
Mutual Aid Agreements	Yes	Fire Districts, Highway Superintendents
<b>Technical/Staffing Capability</b>		
Planner(s) or engineer(s) with knowledge of land development and land management practices	No	Hire as Needed
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	No	Hire as needed
Planners or engineers with an understanding of natural hazards	Yes	Support by County highway engineers, SWCD (county level)
NFIP Floodplain Administrator (FPA)	Yes	Code Official
Surveyor(s)	No	-
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	Yes	County GIS
Scientist familiar with natural hazards	No	-
Emergency Manager	Yes	Town Supervisor
Grant writer(s)	No	-
Staff with expertise or training in benefit/cost analysis	No	-
Professionals trained in conducting damage assessments	No	-

## Fiscal Capability

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

**Table 9.15-8. Fiscal Capabilities**

Financial Resources	Accessible or Eligible to Use (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	Yes (NYRising)
Capital improvements project funding	Yes
Authority to levy taxes for specific purposes	Yes
User fees for water, sewer, gas or electric service	No
Impact fees for homebuyers or developers of new development/homes	No
Stormwater utility fee	No
Incur debt through general obligation bonds	Yes

Financial Resources	Accessible or Eligible to Use (Yes/No)
Incur debt through special tax bonds	Yes
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	

## Community Classifications

The table below summarizes classifications for community program available to the Town of Tioga.

**Table 9.15-9. Community Classifications**

Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	No	-	-
NYSDEC Climate Smart Community	No	-	-
Storm Ready Certification	Yes	Countywide	
Firewise Communities classification	No	-	-
Natural disaster/safety programs in/for schools	No	-	-
Organizations with mitigation focus (advocacy group, non-government)	No	-	-
Public education program/outreach (through website, social media)	No	-	-
Public-private partnership initiatives addressing disaster-related issues	No	-	-

Note:

N/A Not applicable  
 NP Not participating  
 - Unavailable

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

Criteria for classification credits are outlined in the following documents:

- The Community Rating System Coordinators Manual
- The Building Code Effectiveness Grading Schedule (<https://www.isomitigation.com/bcegs/iso-s-building-code-effectiveness-grading-schedule-bcegs.html>)

- The ISO Mitigation online ISO's Public Protection website at <https://www.isomitigation.com/ppc/>
- New York State Climate Smart Communities (<http://www.dec.ny.gov/energy/56876.html>)
- The National Weather Service Storm Ready website at <http://www.stormready.noaa.gov/index.html>
- The National Firewise Communities website at <http://firewise.org/>

### Self-Assessment of Capability

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

**Table 9.15-10. Self-Assessment Capability for the Municipality**

Area	Degree of Hazard Mitigation Capability		
	Limited (If limited, what are your obstacles?)	Moderate	High
Planning and regulatory capability	X (No zoning)		
Administrative and technical capability			X
Fiscal capability			X
Community political capability		X	
Community resiliency capability		X	
Capability to integrate mitigation into municipal processes and activities		X	

### National Flood Insurance Program

#### NFIP Floodplain Administrator (FPA)

Robert Klossner, Code Enforcement

#### Flood Vulnerability Summary

The FPA is responsible for floodplain administration. The NFIP administration services or functions include review of all flood plains, permits, performance of inspections, damage assessments, record keeping, outreach, pamphlets, and answering questions.

#### Resources

In order to better fulfill responsibilities as the municipal floodplain administrator the FPA would consider attending continuing education and/or certification training on floodplain management if it were offered in the County for all local floodplain administrators.

#### Compliance History

The Town of Tioga is good standing with the NFIP. According to the NYSDEC, the most recent compliance audit was conducted on April 6, 2015. The Town regularly determines if a Community Assistance Visit (CAV) or Community Assistance Contact (CAC) is needed, and schedule if needed. The Town maintains compliance with and good-standing in the NFIP including adoption and enforcement of floodplain management requirements (e.g. regulating all new and substantially improved construction in Special Hazard Flood Areas), floodplain identification and mapping, and flood insurance outreach to the community.



## Regulatory

The Town of Tioga is working to adopt higher regulatory standards to manage flood risk (i.e. increased freeboard, cumulative substantial damage/improvements).

## Integration of Hazard Mitigation into Existing and Future Planning Mechanisms

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

## Planning

**Tioga County Hazard Mitigation Plan:** The Town of Tioga supports the implementation, monitoring, maintenance, and updating of this Plan.

**Master Plan:** The Town of Tioga has a Master/Comprehensive Plan (land-use plan). The plan includes areas of natural hazard risk (e.g. flood-prone areas, steep slopes) but does not refer to the Countywide Hazard Mitigation Plan.

**Comprehensive Emergency Management Plan:** The Town of Tioga has a Comprehensive Emergency Management Plan. The Plan refers to the Hazard Mitigation plan.

## Regulatory and Enforcement (Ordinances)

**Zoning, Subdivision, and Site Plan Review:** The FPA noted that the municipal zoning, subdivision regulations, and site plan review process considers natural hazard risk (e.g. the presence of floodplains, steep slopes, etc.) but do not require developers to take additional actions to mitigate natural hazard risk (e.g. undergrounding utilities, stormwater detention, creating easements in areas/zones of hazard risk).

**Flood Damage Prevention Ordinance:** The Town of Tioga's NFIP Flood Damage Protection Ordinance meets the minimum Federal and State NFIP regulatory requirements.

## Operational and Administration

**Mutual Aid Agreements:** The Town works to establish agreements with entities that can provide support with FEMA/SOEM paperwork after disasters; qualified damage assessment personnel, improved post-disaster capabilities, FEMA/SOEM paperwork compilation, submissions, and record-keeping. Agreements are currently in place between Town and Village officials.

The Stormwater Management functions in the Town are performed by both local and state staff. The NFIP Floodplain Management functions in the Town are carried out by Robert Klossner, Code Enforcement. The Town of Tioga does not have a municipal planner or contract planning firm. The Town does not have a Planning/Zoning Board or any Boards or Committees that include functions with respect to managing natural hazard risk.

The Town contracts with firms that have experience with developing Benefit-Cost Analysis, performing Substantial Damage Estimates, and have experience in preparing grant applications for mitigation projects. Town staff receive training or continuing professional education which supports natural hazard risk reduction. The FPA stated that the Town had no other hazard management programs in place.



According to the FPA, no Town staff have job descriptions that specifically include identifying and/or implementing mitigation projects/actions or other efforts to reduce natural hazard risk and staff participate in associations, organizations, groups or other committees that support natural hazard risk reduction and build hazard management capabilities.

### **Funding**

The Town of Tioga's municipal/operating budget does not include line items for mitigation projects/activities. The Town does not have a Capital Improvements Budget. The Town has pursued grant funds for mitigation-related projects in the past including NY Rising funding for a salt shed, elevating Halsey Valley Road, a new generator for Town Hall, a message board, and Pipe Creek stabilization. A new alarm system was also installed in 2012 using grant funding.

### **Education and Outreach**

The FPA stated that public outreach to inform citizens on natural hazards (e.g. safe use of generators, emergency preparedness, flood hazard information) takes place at local meetings. The FPA noted that some written literature could help enhance outreach and education efforts.

The Town conducts and facilitates community and public education and outreach for residents and businesses to include, but not be limited to, the following to promote and effect natural hazard risk reduction:

- Provide and maintain links to the HMP website, and regularly post notices on the County/municipal homepage(s) referencing the HMP webpages.
- Prepare and distribute informational letters to flood vulnerable property owners and neighborhood associations, explaining the availability of mitigation grant funding to mitigate their properties, and instructing them on how they can learn more and implement mitigation.
- Use email notification systems and newsletters to better educate the public on flood insurance, the availability of mitigation grant funding, and personal natural hazard risk reduction measures.
- Work with neighborhood associations, civic and business groups to disseminate information on flood insurance and the availability of mitigation grant funding.

### **Sheltering, Evacuation, and Temporary Housing**

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

Tioga County, through a buildable land analysis, has identified areas suitable for placing temporary and permanent housing. Refer to Section 4.7.5 in Section 4 (County Profile) of Volume 1 of this plan for a description of resources identified by the county to support municipalities with the identification of evacuation, sheltering, and temporary and permanent housing. Each year, during the annual HMP progress meeting, the municipality will discuss their progress in identifying shelters, evacuation routes, and temporary and permanent housing for their community.

### **Temporary and Permanent Housing**

Due to the lack of property with available amenities for temporary housing, immediately following a disaster requiring the need for temporary housing sites, the Town intends to utilize available slots at privately owned facilities including trailer parks or campgrounds and as indicated in the County-wide map provided in Section 4 (County Profile) of this plan. The Town will work with the County to develop suitable Memoranda of Understanding with identified facility owners.



### Evacuation and Sheltering Needs

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Procedures in place for sheltering include the notification of the County Emergency Management Plan Coordinator, the Town Supervisor, and the Red Cross. During an evacuation situation, the Town Supervisor contacts the County Emergency Management Plan Coordinator and decide on evacuation routes.

### 9.15.6 Mitigation Strategy and Prioritization

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

#### Past Mitigation Initiative Status

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



**Table 9.15-11. Status of Previous Mitigation Actions**

Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
						Cost		
1	Pipe Creek needs to be studied using the Rosgen method in order to stabilize sections of the stream. Smaller projects on Pipe Creek in progress. Tioga County SWCD has secured funding for several stabilization projects to occur in the Pipe Creek Watershed. In 2007, 3000 feet of streambank on Pipe Creek was mitigated after improper maintenance of the stream occurred.	Flood	Extreme rains cause Pipe Creek to overflow its banks, eroding, and ultimately destroying, productive agricultural lands.	Town administration with support of SWCD	In Progress		-	1. Include in 2018 HMP Pipe Creek needs to be studied using the Rosgen method in order to stabilize sections of the stream. Smaller projects on Pipe Creek in progress. Tioga County SWCD has secured funding for several stabilization projects to occur in the Pipe Creek Watershed. In 2007, 3000 feet of streambank on Pipe Creek was mitigated after improper maintenance of the stream occurred. 2. - 3. -
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
2	Pipe Creek- stream erosion and gravel deposition.	Flood	Halsey Valley Road and 17C – road floods and makes it difficult for emergency vehicles to operate; also, streambank erosion in this location.	Town administration with support of SWCD	In Progress	Cost	Est \$1.9M	1. Include in 2018 HMP Raise a quarter-mile stretch of the southern portion of Halsey Valley Road to match the elevation of the perpendicular crossing road, NY State Route 17C. 2. - 3. -
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
3	Halsey Valley and Dubois Road – streambank erosion occurring along crop field believed to be major source of gravel deposition to the stream.	Flood	Streambank erosion occurring along crop field believed to be major source of gravel deposition to the stream.	Town administration with support of SWCD	In Progress	Cost	-	1. Include in 2018 HMP Have erosion issues evaluated by SWCD to determine appropriate course of action. Flooding of Route 17c is DOT's jurisdiction, road is located in floodplain. 2. - 3. -
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
4	Goodrich Settlement Area –	Flood	flooding occurs in this area; residents concerned if	Town Administration with support of SWCD	In Progress	Cost	-	1. Include in 2018 HMP Village of Owego will have to have proposal to increase berm height along Owego Creek evaluated by
						Level of Protection	-	





Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. 3. If discontinue, explain why.
						Damages Avoided; Evidence of Success		
			Village of Owego were to increase berms on the eastern side of the creek.					engineer to make sure it will not impact others. Concerns will be addressed by engineer review.
						Cost	-	3. -
						Level of Protection	-	1. Include in 2018 HMP Multi-phase project: Phase 1 being a study to identify solutions and engineer best solution over 1 year. It would be 6 months to year before the next phase would start. Phase 2 would be to implement best solution.
5	Perform a study to evaluate the viability of building a dike wall on the west side of Pipe Creek from the existing rail road bridge on the north side of the Susquehanna River to the Route 17C bridge, then on northward to the Allen Road bridge. This could protect approximately 25 homes along Route 17C. during 100-year flood events.	Flood	<p>The Tioga Center hamlet floods when there is a major rain event due to overflow of the Susquehanna River. The frequent flooding affects every resident of the hamlet as it has destroyed the post office.</p> <p>The Tioga central school is a shelter and has never been flooded but it is vulnerable. The new bus Tioga Central school district facility had 3 feet of water in 2011.</p> <p>The Tioga Center Hamlet boundaries run from pipe creek, west side to RR</p>	Town Administration with support of SWCD	No Progress	Damages Avoided; Evidence of Success	-	3. -

Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
			bridge to 17 C Bridge to Allen Rd. bridge-5th Ave. area, school, and fire station.					
6	Ransom Park-Rebuild and potentially elevate Barn located in Ransom Memorial Park. This park is a vital part of the community.	Flood	Barn is located in the floodplain and susceptible to damages.	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	Complete	Cost	Above \$190,000	1. Discontinue 2. - 3. Project has been completed.
						Level of Protection	25-year	
						Damages Avoided; Evidence of Success	Barn was not elevated but foundation was rebuilt which makes it easy to clean after flood events. Moved main electrical panel upstairs and added a sub panel downstairs.	
7	Retrofit structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority. <b>Address Tioga County Public Works.</b> Phase 1: Identify appropriate candidates for retrofitting based on cost-effectiveness versus relocation. Phase 2: Where retrofitting is determined to be a viable option, work with property owners toward implementation of that action based on available	Flood, Severe Storm, Earthquake	Structures in the Town are not elevated and at risk to flood damages	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	Complete	Cost	Two way-\$1500?. 2 generators-\$1500?. Alert system-\$30,000?	1. Discontinue 2. - 3. Project has been completed.
						Level of Protection	100-year	
						Damages Avoided; Evidence of Success	Town hall is now emergency command center. Two-way communication has been set up with highway dept and fire dept. 2 standby generators have been purchases	



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
	funding from FEMA and local match availability.						for the town hall and highway dept. School has become a Red Cross shelter. Received grant to install a new alert system for the town.	
8	Purchase, or relocate structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority. Phase 1: Identify appropriate candidates for relocation based on cost-effectiveness versus retrofitting. <b>Fifteen homes have been identified and included in the September 2011 HMGP LOI for property acquisitions in the following areas:</b> <b>State Route 17C, Halsey Valley Road, Maple Avenue, Higby Road, Locust Lane, Waverly Road, Catatonk Creek Road, and Allyn Road.</b> Phase 2: Where relocation is determined to be a viable option, work with property owners toward implementation of that action based on available funding from FEMA and local match availability.							
	See above	Flood, Severe Storm	Structures in the Town are not elevated and at risk to flood damages	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	In Progress	Cost	\$1.5 million for buyouts	1. Include in 2018 HMP 2. Work with homeowners to elevate homes 3. -
						Level of Protection	100-year	
						Damages Avoided; Evidence of Success	13 buyouts completed. 2 new houses built above flood level and 2 houses raised above flood level.	
9	Maintain compliance with and good-standing in the NFIP including adoption and enforcement of floodplain management requirements (e.g. regulating all new and substantially improved construction in Special Hazard Flood Areas), floodplain identification and mapping, and flood insurance outreach to the community.	Flood, Severe Storms	This is an ongoing capability for the Town; there is no original problem identified for this project.	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, ISO FEMA	Ongoing Capability	Cost	-	1. Discontinue as this is an ongoing capability. 2. - 3. -
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. 3. If discontinue, explain why.
	Further, continue to meet and/or exceed the minimum NFIP standards and criteria through the following NFIP-related continued compliance actions identified as Initiatives 10 - 21 (below).							
10	Begin the process to adopt higher regulatory standards to manage flood risk (i.e. increased freeboard, cumulative substantial damage/improvements).	Flood, Severe Storms	This is an ongoing capability for the Town; there is no original problem identified for this project.	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	Ongoing Capability	Cost	-	1. Discontinue as this is an ongoing capability.
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. -
11	Conduct and facilitate community and public education and outreach for residents and businesses to include, but not be limited to, the following to promote and effect natural hazard risk reduction: <ul style="list-style-type: none"><li>Provide and maintain links to the HMP website, and regularly post notices on the County/municipal homepage(s) referencing the HMP webpages.</li><li>Prepare and distribute informational letters to flood vulnerable property owners and neighborhood associations, explaining the availability of mitigation grant funding to mitigate their properties, and instructing them on how they can learn more and implement mitigation.</li><li>Use email notification systems and newsletters to better educate the public on flood insurance, the availability of mitigation grant funding, and personal natural hazard risk reduction measures.</li><li>Work with neighborhood associations, civic and business groups to disseminate information on flood insurance and the availability of mitigation grant funding.</li></ul>							
	See above	All Hazards	This is an ongoing capability for the Town; there is no original problem identified for this project.	Municipality with support from Planning Partners, NYSOEM, FEMA	Ongoing Capability	Cost	-	1. Discontinue as this is an ongoing capability.
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. -
12	Determine if a Community Assistance Visit (CAV) or Community Assistance Contact (CAC) is needed, and schedule if needed.	Flood, Severe Storms	This is an ongoing capability for the Town; there is no original problem identified for this project.	NFIP Floodplain Administrator with support from NYSDEC, NYSOEM, FEMA	Ongoing Capability	Cost	-	1. Discontinue as this is an ongoing capability.
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. The Town had a CAV conducted on April 6, 2015.



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
						Cost		
13	Have designated NFIP Floodplain Administrator (FPA) become a Certified Floodplain Manager through the ASFPM and pursue relevant continuing education training such as FEMA Benefit-Cost Analysis.	Flood, Severe Storms	This is an ongoing capability for the Town; there is no original problem identified for this project.	NFIP Floodplain Administrator	Ongoing Capability	Cost	-	1. Discontinue as this is an ongoing capability. 2. 3.
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
14	Participate in the Community Rating System (CRS) to further manage flood risk and reduce flood insurance premiums for NFIP policyholders. This shall start with the submission to FEMA-DHS of a Letter of Intent to join CRS, followed by the completion and submission of an application to the program once the community's current compliance with the NFIP is established.	Flood, Severe Storms	This is an ongoing capability for the Town; there is no original problem identified for this project.	NFIP Floodplain Administrator with support from NYSDEC, NYSOEM, FEMA	Ongoing Capability	Cost	-	1. Discontinue as this is an ongoing capability. 2. 3.
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
15	Archive elevation certificates	Flood, Severe Storm	This is an ongoing capability for the Town; there is no original problem identified for this project.	NFIP Floodplain Administrator	Ongoing Capability	Cost	-	1. Discontinue as this is an ongoing capability. 2. 3.
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
16	Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Section 7.0	All Hazards	This is an ongoing capability for the Town; there is no original problem identified for this project.	Municipality (via mitigation planning point of contacts) with support from Planning Partners (through their Points of	Ongoing Capability	Cost	-	1. Discontinue as this is an ongoing capability. 2. 3.
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
						Cost		
				Contact), NYSOEM				
17	Complete the ongoing updates of the Comprehensive Emergency Management Plans – <b>Include Tioga Central School District and the Tioga Fire District and use local media such as WEBO, WATS, and WBNG.</b>	All Hazards	This is an ongoing capability for the Town; there is no original problem identified for this project.	Municipality with support from NYSOEM	Ongoing Capability	Cost	-	1. Ongoing. The Town is working with the new school superintendent of the emergency management plan. 2. 3.
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
18	Create/enhance/ maintain mutual aid agreements with neighboring communities for continuity of operations.	All Hazards	This is an ongoing capability for the Town; there is no original problem identified for this project.	Municipality with support from Surrounding municipalities and County	Ongoing Capability	Cost	-	1. Discontinue as this is an ongoing capability. 2. 3.
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
19	Identify and develop agreements with entities that can provide support with FEMA/NYS DHSES paperwork after disasters; qualified damage assessment personnel – Improve post-disaster capabilities – damage assessment; FEMA/SOEM paperwork compilation, submissions, record-keeping	All Hazards	This is an ongoing capability for the Town; there is no original problem identified for this project.	Municipality with support from County, NYSOEM, FEMA	Ongoing Capability	Cost	-	1. Discontinue – ongoing capability 2. - 3. The Town works with agencies on post disaster paperwork.
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
20	Work with regional agencies (i.e. County and NYSDHSES) to help develop damage assessment capabilities at the local level through such things as training programs, certification of qualified individuals (e.g.	All Hazards	This is an ongoing capability for the Town; there is no original problem identified for this project.	Municipality with support from County, NYSOEM	Ongoing Capability	Cost	-	1. Discontinue as this is an ongoing capability. 2. - 3. -
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. 3. If discontinue, explain why.
	code officials, floodplain managers, engineers).							
21	Participate in local, county and/or state level projects and programs to develop improved structure and facility inventories and hazard datasets to support enhanced risk assessment efforts. Such programs may include developing a detailed inventory of critical facilities based upon FEMA's Comprehensive Data Management System (CDMS) which could be used for various planning and emergency management purposes including: <ul style="list-style-type: none"> <li>Support the performance of enhanced risk and vulnerability assessments for hazards of concern.</li> <li>Support state, county and local planning efforts including mitigation (including updates to the State HMP), comprehensive emergency management, debris management, and land use.</li> <li>Improved structural and facility inventories could incorporate flood, wind and seismic-specific parameters (e.g. first floor elevations, roof types, structure types based on FEMA-154 "Rapid Visual Screening of Buildings for Potential Seismic Hazards" methodologies). It is recognized that these programs will need to be initiated and supported at the County and/or State level, and will require training, tools and funding provided at the county, state and/or federal level.</li> </ul>							
	See above	All Hazards	This is an ongoing capability for the Town; there is no original problem identified for this project.	HMP Coordinator	Ongoing Capability	Cost	-	1. Discontinue. Ongoing capability.
						Level of Protection	-	2. -
						Damages Avoided; Evidence of Success	-	3. -



### Completed Mitigation Initiatives Not Identified in the Previous Mitigation Strategy

The Town of Tioga has performed ongoing maintenance projects to reduce the impact of flooding but has not identified specific mitigation projects/activities that have been completed but were not identified in the previous mitigation strategy in the 2013 Plan.

### Proposed Hazard Mitigation Initiatives for the Plan Update

The Town of Tioga participated in a mitigation action workshop on July 11, 2018 and was provided the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 ‘Selecting Appropriate Mitigation Measures for Floodprone Structures’ (March 2007) and FEMA ‘Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards’ (January 2013).

Table 9.15-12 summarizes the comprehensive-range of specific mitigation initiatives the Town of Tioga would like to pursue in the future to reduce the effects of hazards. Some of these initiatives may be previous actions carried forward for this plan update. These initiatives are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. The four FEMA mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

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

Table 9.15-13 provides a summary of the prioritization of all proposed mitigation initiatives for the Plan update.



**Table 9.15-12. Proposed Hazard Mitigation Initiatives**

Project Number	Project Name	Description of the Problem	Description of the Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues?	Estimated Timeline	Lead and Support Agencies	Estimated Cost	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category
T. Tioga 1	Flood Protection Study for Hamlet of Tioga	See Action Worksheet	See Action Worksheet	Flood	1	Yes	No	One year	Town of Tioga Supervisor; Flood Administrator	\$75,000 for study, \$10 million for wall) High	See Action Worksheet	HMGP, FMA, USACE, NY Rising	High	LPR
T. Tioga 2	Owego Creek-Catatonk Creek Intersection	See Action Worksheet	See Action Worksheet	Flood	1	No	No	Two years	Town of Tioga Supervisor. Town of Tioga Floodplain Administrator and Tioga County SWCD	\$300,000	See Action Worksheet	WQIP, HMGP	High	NSP
T. Tioga 3 (Prev. Action 5)	Pipe Creek Viability Study	The viability of the dike wall on the west side of Pipe Creek is unknown and it is a threat to homes along Route 17C	Perform a study to evaluate the viability of building a dike wall on the west side of Pipe Creek from the existing rail road bridge on the north side of the Susquehanna River to the Route 17C bridge, then on northward to the Allen Road bridge. This could protect approximately 25 homes along Route 17C. during 100-year flood events.	Flood	1-1, 1-5, 1-7, 2-3	Yes	No	One year	Town Administration with support of SWCD	<\$100,000	Gain better understanding of this area in the town; protect homes and residents in this area	Village Budget	High	SIP
T. Tioga 4 (Prev. Action 1)	Pipe Creek Study	Areas along Pipe Creek need to be stabilized to protect the stream and surrounding properties	Pipe Creek needs to be studied using the Rosgen method in order to stabilize sections of the stream. Smaller projects on Pipe Creek in progress. Tioga County SWCD has secured funding for several stabilization projects to occur in the Pipe	Flood	1-1, 4-1, 4-4	No	No	One year	Town administration with support of SWCD	\$100,000	Medium	EWP/HMGP grants with local match	High	SIP



Project Number	Project Name	Description of the Problem	Description of the Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues?	Estimated Timeline	Lead and Support Agencies	Estimated Cost	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category
			Creek Watershed. In 2007, 3000 feet of streambank on Pipe Creek was mitigated after improper maintenance of the stream occurred.											
T. Tioga 5 (Prev. Action 2)	Pipe Creek-stream erosion and gravel deposition.	Streambank erosion occurring along crop field believed to be major source of gravel deposition to the stream.		Flood	1-1, 4-1, 4-4	No	No	One year	Town administration with support of SWCD	\$100,000	Medium	EWP/HMGP grants with local match	High	NSP
T. Tioga 6 (Prev. Action 3)	Halsey Valley and Dubois Road	During periods of heavy rain, the waters of the Susquehanna River and Pipe Creek overrun their banks, forcing the closure of many roads in the Town. One of the critical connectors that floods is Halsey Road. When closed, this cuts off town residents from access to medical assistance, groceries, and emergency services.	Raise a quarter-mile stretch of the southern portion of Halsey Valley Road to match the elevation of the perpendicular crossing road, NY State Route 17C. This would reduce future flooding along Halsey Valley Road and ensure that emergency vehicles can access homes located along Halsey Valley Road and nearby medical hospitals during future storms. When constructed, the road will meet all required specifications and safety standards.	Flood	1-1, 4-1, 4-4	No	No	One year	Town administration with support of SWCD	\$1.9 million	Reduce flooding of Halsey Valley Road, increase emergency access and evacuation routes	EWP/HMGP grants with local match; NY Rising	High	NSP
T. Tioga 7 (Prev. Action 4).	Goodrich Settlement Area	Flooding occurs in this area; residents concerned if	Village of Owego will have to have proposal to increase berm height along	Flood	1-1, 1-5, 1-7, 2-3	No	No	Less than 5 years	Town Administration with support of SWCD and	Low	Low	Local Budget	High	SIP



Project Number	Project Name	Description of the Problem	Description of the Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues?	Estimated Timeline	Lead and Support Agencies	Estimated Cost	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category
		Village of Owego were to increase berms on the eastern side of the creek.	Owego Creek evaluated by engineer to make sure it will not impact others. Concerns will be addressed by engineer review.						Village of Owego					
T. Tioga 8	Floodprone, repetitive loss and severe repetitive loss properties	There are floodprone, repetitive loss and severe repetitive loss properties located throughout the town. It is unknown as to whether or not the properties are mitigated and if the property owner wants to mitigate their property.	Work with property owners of structures located in the floodplain. Inform the owners they are located in the floodplain and provide mitigation options for those properties. If property owner chooses to mitigate, Town will work with the property owner.	Flood, Severe Storm	1-2, 1-9, 3-2	No	No	Less than 5 years	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSDHES, FEMA	Less than \$10,000	Increase awareness of property owners, reduce flood damage	FEMA Mitigation Grant Programs and local budget (or property owner) for cost share	High	SIP
T. Tioga 9 (Prev. Action 17)	Update of Comprehensive Emergency Operations Plan	The Comprehensive Emergency Operations Plan is in need of an update and input from communities	Complete the ongoing updates of the Comprehensive Emergency Management Plans – Include Tioga Central School District and the Tioga Fire District and use local media such as WEBO, WATS, and WBNG.	All Hazards	1-1, 1-7, 3-1, 5-1, 6-2, 6-3, 6-4	No	No	Less than 5 years	Municipality with support from NYSOEM	Low	Low	Local Budget	High	ES
T. Tioga 10 (Prev. Action 19)	Agreements with FEMA and NYSDHSES	No formal agreement in place to support FEMA and NYSDHSES with paperwork after disasters	Identify and develop agreements with entities that can provide support with FEMA/NYSDHSES paperwork after disasters; qualified damage assessment	All Hazards	5-1, 5-2, 5-3	No	No	One year	Municipality with support from County, NYSOEM, FEMA	Medium	Medium	Local budget	Medium	PP



Project Number	Project Name	Description of the Problem	Description of the Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues?	Estimated Timeline	Lead and Support Agencies	Estimated Cost	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category
			personnel – Improve post-disaster capabilities – damage assessment; FEMA/NYS DHSES paperwork compilation, submissions, record-keeping											
T. Tioga 11 (NYR Project)	Salt Storage Facility and Cover, Town of Tioga	The rapidly rising floodwaters associated with Hurricane Irene and Tropical Storm Lee washed away the Town's unprotected salt supply, causing potential environmental contamination to nearby groundwater and agricultural lands.	Purchase and install a salt storage facility (shed) and cover to protect municipal resources and reduce the potential for environmental contamination during future storm events.	Flood, Severe Storm, Severe Winter Storm	All	No	No	1 year	Town Public Works	\$460,000	Protect municipal resources in the event of a future storm; reduce contamination of downstream waterways; protect salt supplies during winter storm events	NY Rising, Municipal Budget, Regional Economic Development Councils grants, Water Quality Improvement Project Program	Medium	SIP
T. Tioga 12 (NYR Project)	Alternative Energy Study	As a result of the flooding associated with Tropical Storm Lee, businesses, especially agricultural operations, in the Town of Tioga were negatively impacted. The extreme rains forced the waters of Pipe Creek to overflow its banks, eroding,	Explore use of micro-grids to help reduce the cost of long term operations and help residents, businesses and municipal facilities to thrive in the post storm economy.	All	All	No	No	1 year	Town Board with assistance from business owners	\$75,000	Potential economic gains by homeowners, businesses, and public facilities; provide potential reductions in air and water pollutions; provide alternate power sources during power outages	NY Rising, Municipal Budget	SIP	LPR



Project Number	Project Name	Description of the Problem	Description of the Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues?	Estimated Timeline	Lead and Support Agencies	Estimated Cost	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category
		and ultimately destroying, productive agricultural lands. During the public outreach process, local farmers and business owners stated that they are still trying to recover financially from the losses associated with this storm.												
T. Tioga 13 (NYR Project)	Sewer Expansion	The majority of the septic systems in the Town of Tioga consist of a tank and dry well. During Hurricane Irene and Tropical Storm Lee, the flooding associated with these storms led to the failure of most of the septic systems located in the floodplain. This led to the discharge of untreated wastewater into the Town's groundwater and surface waters, and potential environmental contamination.	Town of Tioga partner with the Tioga Central School District to use the existing wastewater treatment plant at the school and create a shared municipal sewer system to reduce potential environmental contamination during future storm events. The project includes the engineering, design, and construction of new laterals.	Flood, Severe Storms	All	Yes	No	2 years	Town Public Works, Tioga Central School Board	\$2,000,000	Reduce the risk of sanitary sewer overflow during severe storms; risk to public health, both locally and in downstream communities, would be reduced by ensuring sanitary sewage is properly contained and treated	NY Rising, Municipal Budget, School Budget, USDA Waste and Water Disposal Grant, CDBG	Medium	SIP

Project Number	Project Name	Description of the Problem	Description of the Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues?	Estimated Timeline	Lead and Support Agencies	Estimated Cost	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category
T. Tioga 14 (NYR Project)	Gap Analysis and Consolidated Emergency Plan	The Town does not have an emergency plan nor does the town have a fully understanding of existing gaps between the County HMP and the Town's Emergency Response Plan.	Prepare a Consolidated Emergency Plan for the Town of Tioga. This consolidated plan will identify existing gaps between Tioga County's Hazard Mitigation Plan and the Town of Tioga's Emergency Response Plan (ERP).	All	All	No	No	1 year	Town Board	\$50,000	Understanding of gaps between county and local plans; improve emergency response and capabilities in the town	NY Rising, Municipal Budget	Medium	LPR

Notes:

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

**Acronyms and Abbreviations:**

CAV	Community Assistance Visit
CRS	Community Rating System
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
FPA	Floodplain Administrator
HMA	Hazard Mitigation Assistance
N/A	Not applicable
NFIP	National Flood Insurance Program
OEM	Office of Emergency Management

**Potential FEMA HMA Funding Sources:**

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

**Timeline:**

The time required to complete the project

**Cost:**

Estimated costs associated with implementation


**Benefits:**

The benefits that implementation of this project will provide.

**Mitigation Category:**

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

**Critical Facility:**

- Yes  - Critical Facility located in 1% floodplain

**Table 9.15-13. Summary of Prioritization of Actions**

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
T. Tioga 1	Flood Protection for Hamlet of Tioga	1	1	1	1	0	1	1	1	1	1	0	1	1	0	11	High
T. Tioga 2	Owego Creek-Catatonk Creek Intersection	1	1	1	1	0	1	1	1	0	1	1	1	0	0	10	High
T. Tioga 3 (Prev. Action 5)	Pipe Creek Viability Study	1	1	1	1	0	1	1	1	0	1	1	1	0	0	10	High
T. Tioga 4 (Prev. Action 1)	Pipe Creek Study	1	1	1	1	0	1	1	1	0	0	1	1	0	0	9	High
T. Tioga 5 (Prev. Action 2)	Pipe Creek- stream erosion and gravel deposition.	1	1	1	1	0	1	1	1	0	0	1	1	0	0	9	High
T. Tioga 6 (Prev. Action 3)	Halsey Valley and Dubois Road	1	1	1	1	0	1	1	1	0	0	1	1	0	0	9	High
T. Tioga 7 (Prev. Action 4).	Goodrich Settlement Area	1	1	1	1	0	1	1	1	0	0	1	1	0	0	9	High
T. Tioga 8	Floodprone, repetitive loss and severe repetitive loss properties	1	1	1	1	0	1	1	1	0	0	1	1	0	0	9	High
T. Tioga 9 (Prev. Action 17)	Update of Comprehensive Emergency Operations Plan	1	1	1	1	0	1	1	1	0	0	1	1	0	0	9	High
T. Tioga 10 (Prev. Action 19)	Agreements with FEMA and NYSDHSES	1	1	1	1	0	0	1	1	0	0	1	1	0	0	8	Medium
T. Tioga 11 (NYR Project)	Salt Storage Facility and Cover, Town of Tioga	1	1	1	1	1	0	0	1	0	1	1	0	0	0	8	Medium
T. Tioga 12 (NYR Project)	Alternative Energy Study	1	1	1	1	0	0	0	0	1	1	1	1	0	0	8	Medium
T. Tioga 13 (NYR Project)	Sewer Expansion	1	1	1	1	0	0	0	1	1	0	1	0	1	0	8	Medium
T. Tioga 14 (NYR Project)	Gap Analysis and Consolidated Emergency Plan	1	1	1	1	1	0	0	0	1	0	1	0	0	0	7	Medium

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



### **9.15.7 Future Needs To Better Understand Risk/Vulnerability**

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None at this time.

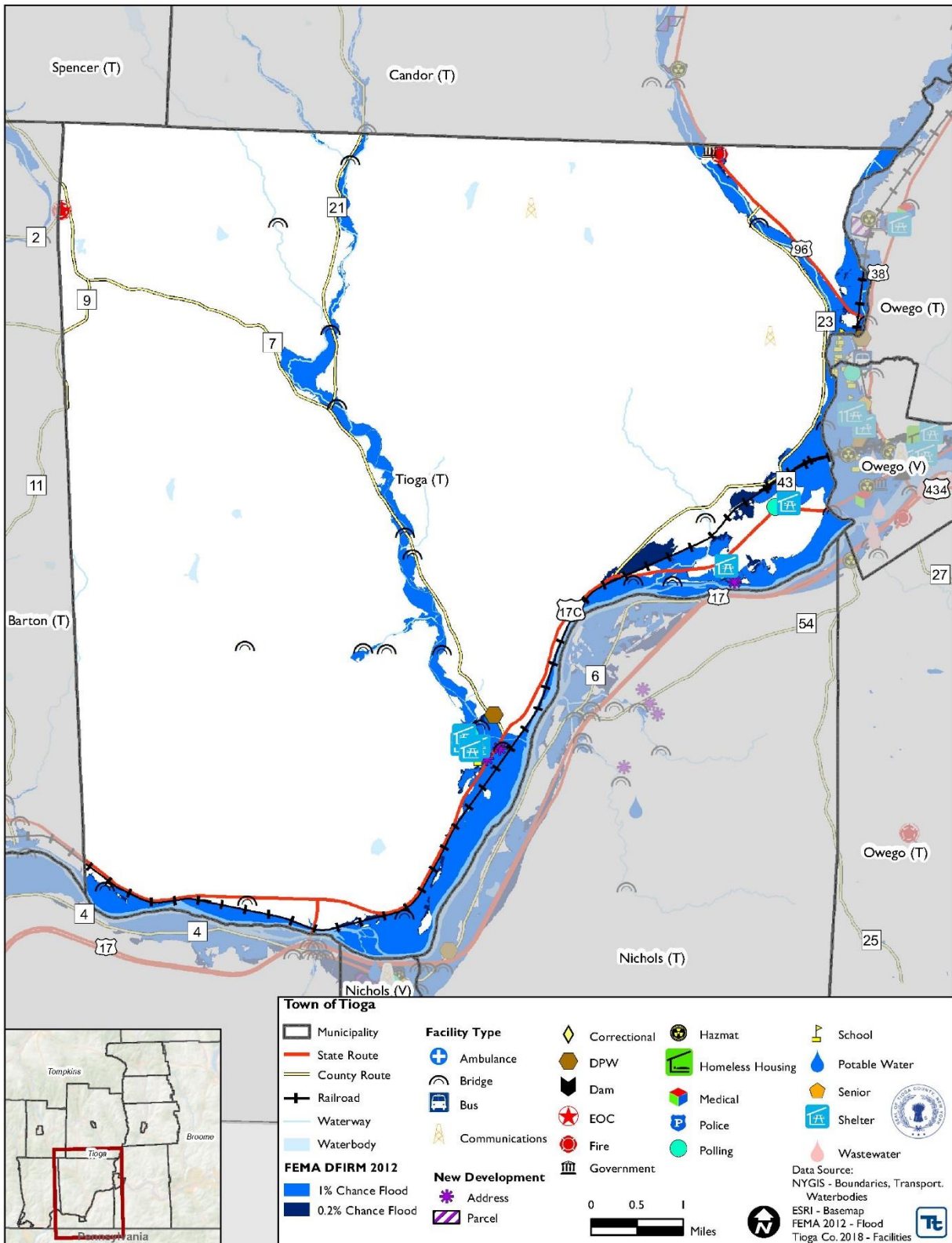
### **9.15.8 Hazard Area Extent and Location**

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



Figure 9.15-1. Town of Tioga Hazard Area Extent and Location





Town of Tioga Action Worksheet			
<b>Project Name:</b>	Flood Protection Study for Hamlet of Tioga		
<b>Project Number:</b>	T. Tioga 1		
<b>Risk / Vulnerability</b>			
<b>Hazard(s) of Concern:</b>	Flood		
<b>Description of the Problem:</b>	<p>The Tioga Center hamlet floods when there is a major rain event due to overflow of the Susquehanna River. The frequent flooding affects every resident of the hamlet as it has destroyed the post office. The Tioga central school is a shelter and has never been flooded but it is vulnerable. The new bus Tioga Central school district facility had 3 feet of water in 2011.</p> <p>The Tioga Center Hamlet boundaries run from pipe creek, west side to RR bridge to 17 C Bridge to Allen Rd. bridge-5<sup>th</sup> Ave. area, school, and fire station.</p>		
<b>Action or Project Intended for Implementation</b>			
<b>Description of the Solution:</b>	Multi-phase project: Phase 1 being a study to identify solutions and engineer best solution over 1 year. It would be 6 months to year before the next phase would start. Phase 2 would be to implement best solution.		
<b>Is this project related to a Critical Facility?</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
<b>Is this project related to a Critical Facility located within the 100-year floodplain?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
<b>Level of Protection:</b>	500-year	<b>Estimated Benefits (losses avoided):</b>	Overall value of the hamlet and its residents
<b>Useful Life:</b>	50 years		
<b>Estimated Cost:</b>	High		
<b>Plan for Implementation</b>			
<b>Prioritization:</b>	High	<b>Desired Timeframe for Implementation:</b>	Within one year
<b>Estimated Time Required for Project Implementation:</b>	5-10 years	<b>Potential Funding Sources:</b>	HMGP, FMA USACE, NY rising
<b>Responsible Organization:</b>	Town of Tioga Supervisor; Flood Administrator	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	Tioga County GIS
<b>Three Alternatives Considered (including No Action)</b>			
<b>Alternatives:</b>	<b>Action</b>	<b>Estimated Cost</b>	<b>Evaluation</b>
	No Action	\$0	Problem continues
	Build a dike wall (btw railroad bridge and Allen Road ~half mile)	\$75,000 for study, \$10 million for wall)	Reduce flood damages
	Re-route two creeks (un-named and Pipe Creek	High	Unacceptable due to location environmental concerns.
<b>Progress Report (for plan maintenance)</b>			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			



Town of Tioga Action Worksheet		
<b>Project Name:</b>	Flood Protection Study for Hamlet of Tioga	
<b>Project Number:</b>	T. Tioga 1	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	Project will reduce flooding which affects the post office and other facilities around the hamlet.
Cost-Effectiveness	1	
Technical	1	
Political	0	
Legal	1	Project area within the Town of Tioga
Fiscal	1	HMGP, FMA USACE, NY rising
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	0	
Timeline	1	Timeline can be completed within 1 year
Agency Champion	1	
Other Community Objectives	0	
<b>Total</b>	11	
<b>Priority (High/Med/Low)</b>	High	



Town of Tioga Action Worksheet			
<b>Project Name:</b>	Owego Creek-Catatonk Creek Intersection		
<b>Project Number:</b>	T. Tioga 2		
<b>Risk / Vulnerability</b>			
<b>Hazard(s) of Concern:</b>	Flood (streambank erosion)		
<b>Description of the Problem:</b>	The streambank is eroded by Owego creek into the Catatonk Creek, a 50-foot bank is being undermined and affecting 2 homes as the bank is starting to undermine the structures on Glen Mary Drive.		
<b>Action or Project Intended for Implementation</b>			
<b>Description of the Solution:</b>	Initiate multi-phase project to study the problem, identify solution and engineer solution over 2 years. Phase 2 will be started less than 6 months after a solution has been identified. Phase 2 is to implement the engineered solution.		
<b>Is this project related to a Critical Facility?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
<b>Is this project related to a Critical Facility located within the 100-year floodplain?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
<b>Level of Protection:</b>	100 year	<b>Estimated Benefits (losses avoided):</b>	\$250,000 homes and county road.
<b>Useful Life:</b>	20 years		
<b>Estimated Cost:</b>	\$300,000		
<b>Plan for Implementation</b>			
<b>Prioritization:</b>	High	<b>Desired Timeframe for Implementation:</b>	Less than one year
<b>Estimated Time Required for Project Implementation:</b>	2 years	<b>Potential Funding Sources:</b>	WQIP, HMGP
<b>Responsible Organization:</b>	Town of Tioga Supervisor. Town of Tioga Floodplain Administrator and Tioga County SWCD	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	Tioga County SWCD
<b>Three Alternatives Considered (including No Action)</b>			
<b>Alternatives:</b>	<b>Action</b>	<b>Estimated Cost</b>	<b>Evaluation</b>
	No Action	\$0	Problem continues
	Rebuild streambank	\$300,000	Prevent the loss of 2 homes, if left unchecked the house foundations will be undermined.
	Acquire properties and demolish homes	\$250,000 plus demo costs and restoration costs	Even with acquisition need streambank stabilization to avoid loss of County road
<b>Progress Report (for plan maintenance)</b>			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			



Town of Tioga Action Worksheet		
<b>Project Name:</b>	Owego Creek-Catatonk Creek Intersection	
<b>Project Number:</b>	T. Tioga 2	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
<b>Life Safety</b>	1	2 Homes are currently within the floodplain
<b>Property Protection</b>	1	Catatonk Creek is being undermined and is undermining structures of Glen Mary Drive
<b>Cost-Effectiveness</b>	1	
<b>Technical</b>	1	
<b>Political</b>	0	
<b>Legal</b>	1	Project area within Town of Tioga
<b>Fiscal</b>	1	WQIP, HMGP
<b>Environmental</b>	1	Will reduce streambank erosion
<b>Social</b>	0	
<b>Administrative</b>	1	
<b>Multi-Hazard</b>	1	
<b>Timeline</b>	1	Project can be implemented within 1 year
<b>Agency Champion</b>	0	
<b>Other Community Objectives</b>	0	
<b>Total</b>	10	
<b>Priority (High/Med/Low)</b>	High	



**Tioga County Jurisdictional Annex Review Sign-Off Sheet**  
 Signatures indicate review of annex content by the municipal official

TOWN OF TIoga  
 MUNICIPALITY NAME

**Mayor/Administrator/Supervisor**

Lewis W Zorn  
 Name

Lewis W Zorn  
 Signature

11/9/2018  
 Date

**Fiscal/CFO**

Lewis W Zorn  
 Name

Lewis W Zorn  
 Signature

11/9/2018  
 Date

**Building Code Official**

ROBERT W. KLOSSNER  
 Name / Title

Robert W. Klossner  
 Signature

11/5/18  
 Date

**Floodplain Administrator**

ROBERT W. KLOSSNER  
 Name / Title

Robert W. Klossner  
 Signature

11/5/18  
 Date

**Emergency Manager**

EMO  
 Name / Title

Lewis W Zorn  
 Signature

11/9/2018  
 Date

**Land Use Planner**

Douglas Christopoulos  
 Name / Title

Douglas Christopoulos  
 Signature

11/5/18  
 Date

**Public Works Director**

FRANK CATALANO  
 Name / Title

Frank Catalano  
 Signature

10/9/18  
 Date

**Highway Superintendent**

FRANK CATALANO  
 Name / Title

Frank Catalano  
 Signature

10/9/18  
 Date

**Police Department**

Consable Jerry Pierce  
 Name / Title

Consable Jerry Pierce  
 Signature

10-9-18  
 Date

**Fire Department**

Cathy M. Chitt  
 Name / Title

Cathy M. Chitt  
 Signature

11/6/18  
 Date

## 9.16 VILLAGE OF WAVERLY

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



2010 Population: 4,444  
Population in 100 year Floodplain (SFHA): 212

Land Area: 1429 acres  
Land Area in Floodplain: 14%  
NFIP policies: 35  
NFIP Policies in SFHA: 29  
NFIP Claims: 22  
Total NFIP Losses: \$94,000



Number of Buildings: 1,728  
Replacement Building Value : \$817 million  
Number of Buildings in the SFHA: 96  
Replacement Building Value in the SFHA: \$8.6 million

Mitigation Focus  
Multi-Hazard



### 9.16.1 Hazard Mitigation Plan Point of Contact

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

Primary Point of Contact	Alternate Point of Contact
Pat Ayres, Mayor Phone: 607-565-8106 Email: <a href="mailto:mayor@villageofwaverly.com">mayor@villageofwaverly.com</a>	Dan Gelatt, Chief of Police Phone: 607-565-2836 Email: <a href="mailto:dgelatt@villageofwaverly.com">dgelatt@villageofwaverly.com</a>

## 9.16.2 Municipal Profile

The Village of Waverly is the largest village in Tioga County, New York. According to the U.S. Census Bureau, the village has a total area of 2.3 square miles (6.1 km<sup>2</sup>), of which, 2.3 square miles (5.9 km<sup>2</sup>) of it is land and 0.1 square miles (0.1 km<sup>2</sup>) of it is water. The Chemung River runs the western edge of the village and joins the Susquehanna River about 6 miles (9.7 km) south of the village. The Cayuta Creek, also known locally as Shepard's Creek, flows through the eastern part of the village before joining the Susquehanna.

Downtown Waverly spans along an area adjacent to and immediately North of Interstate 86, which is an upgrade of the existing New York State Route 17 that was formerly known as the Southern Tier Expressway. Access to Interstate 86 is available at both eastern and western points of the village. New York State Route 17C and New York State Route 34 also intersect in the eastern end of this village. In addition, the northern terminus for U.S. Route 220 is at NY 17C (Chemung Street) in the west end of the village.

The village is governed by the village mayor and board of trustees. According to the 2010 Census, the community's population was 4,444.

## Growth/Development Trends

The following table summarizes recent residential/commercial development since 2012 to present and any known or anticipated major residential/commercial development and major infrastructure development that has been identified in the next five years within the municipality. Refer to the map in 9.16.8 of this annex which illustrates the hazard areas along with the location of potential new development.

**Table 9.16-1. Growth and Development**

Property or Development Name	Type (e.g. Res., Comm.)	# of Units / Structures	Location (address and/or Parcel ID)	Known Hazard Zone(s)	Description/Status of Development
<b>Recent Development from 2012 to present</b>					
Dandy Mini Mart	Commercial	1	452 Chemung Street Waverly NY	No	Completed (gas station & convenience store)
Five Star Rental Property	Residential	20	460 Broad Street Waverly	No	Completed (conversion of building into residential rental units)
<b>Known or Anticipated Development in the Next Five (5) Years</b>					
None anticipated.					

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

## 9.16.3 Natural Hazard Event History Specific to the Municipality

Tioga County has a history of natural and non-natural hazard events as detailed in Volume I, Section 5.0 of this plan. A summary of historical events is provided in each of the hazard profiles and includes a chronology of events that have affected the County and its municipalities. For the purpose of this plan update, events that have occurred in the County from 2012 to December 31, 2017 were summarized to indicate the range and impact of hazard events in the community. Information regarding specific damages is included, if available, based on reference material or local sources. This information is presented in the table below. For details of these and additional events, refer to Volume I, Section 5.0 of this plan.



**Table 9.16-2. Hazard Event History**

Dates of Event	Event Type (Disaster Declaration if applicable)	Tioga County Designated?	Summary of Damages/Losses
6/14/15	N/A	N/A	In some areas, homes, schools and other businesses were flooded.
3/14/17	DR 4322	Yes	<p>A Nor'easter moved up the eastern US coast on March 13th to late on the 14th. Heavy snow spread across parts of central New York and Pennsylvania late on March 13th. By late evening on the 14th snowfall amounts range from 8 to 33 inches of snow. After the strong area of low pressure moved northeast, lake effect snow bands formed producing more snow across the area on March 15, 2017.</p> <p>The Village of Waverly filed for FEMA assistance for DPW overtime and use of village trucks for snow cleanup/salt dispersal for \$14,155.</p>
7/23/17	N/A	N/A	Rapid rises of area streams and creeks resulted in severe flash flooding for the Nichols, NY (\$284K in damages) and Vestal, NY areas.
August 2018	Severe Storms and Flooding (DR-4398)	Yes	The Village did not have any reportable damages, but several roads were temporarily closed out of water concerns and a drain culvert (Dry Brook-Broad Street) had to be unplugged by Village DPW.

**Notes:**

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

### 9.16.4 Hazard Vulnerabilities and Ranking

The hazard profiles in Section 5.0 of this plan have detailed information regarding each plan participant's vulnerability to the identified hazards. This section provides a summary of exposure and impacts from significant hazards of concern as identified by the Village of Waverly. For additional vulnerability information relevant to this jurisdiction, refer to Section 5.0.

#### Hazard Risk Ranking

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

As discussed in Section 5.3 (Hazard Ranking), each participating town or village may have differing degrees of risk exposure and vulnerability compared to Tioga County as a whole. Therefore, each municipality ranked the degree of risk to each hazard as it pertains to their community. The table below summarizes the hazard risk/vulnerability rankings of potential natural hazards for the Village of Waverly. The Village has reviewed the hazard risk/vulnerability risk ranking table and has made adjustments as necessary. After reviewing the rankings, the Village adjusted the rankings for severe storm and severe winter from high to medium. While they experience these events on a frequent basis, damages are typically minimal, and the village is adequately outfitted to handle these storms.

**Table 9.16-3. Hazard Risk/Vulnerability Risk Ranking**

Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard <sup>a, b, c</sup>		Probability of Occurrence	Hazard Ranking
Drought	Damage estimate not available		Frequent	Medium
Flood	RCV Exposed to 1% Annual Chance Flood Event	\$78,253,000	Frequent	Medium
Severe Storm	100-year MRP	\$0	Frequent	Medium*
	500-year MRP	<\$1,000		
Severe Winter Weather	1% GBS	\$4,789,130	Frequent	Medium*
	5% GBS	\$23,945,650		

\* The municipality adjusted the hazard ranking

a. Building damage ratio estimates based on FEMA 386-2 (August 2001)

b. Loss estimates for the severe storm and severe winter storm hazards are structural values only and do not include the value of contents.

c. Loss estimates for the flood hazard represents both structure and contents.

### National Flood Insurance Program (NFIP) Summary

The following table summarizes the NFIP statistics for the Village of Waverly.

**Table 9.16-4. NFIP Summary**

Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 100-year Boundary (3)
Waverly (V)	35	22	\$94,743.00	0	0	29

Source: FEMA 2018

1. Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA and are current as of February 28, 2018 and are summarized by Community Name. Please note the total number of repetitive loss properties excludes the severe repetitive loss properties. The number of claims represents claims closed by 2/28/2018. Total building and content losses from the claims file provided by FEMA Region 2.
2. Total building and content losses from the claims file provided by FEMA Region 2.

### Critical Facilities Flood Risk

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

**Table 9.16-5. Potential Flood Losses to Critical Facilities**

Name	Type	Exposure		Potential Loss from 1% Flood Event		Addressed by Proposed Action
		1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	
Waverly Main Station	Fire		X	-	-	-
Hazard	Hazmat	X	X	-	-	V. Waverly-6
Well 1	Well	X	X	-	-	V. Waverly-6



Name	Type	Exposure		Potential Loss from 1% Flood Event		Addressed by Proposed Action
		1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	
Well 4	Well	X	X	-	-	V. Waverly-6

Source: Tioga County GIS, FEMA 2012, and Hazus 4.2

### Identified Issues

The municipality has identified the following vulnerabilities within their community:

- **Dry Brook Creek:** The Railroad and Broad Street culverts frequently plug with debris, causing flooding and damage to surrounding properties. However, the Town of Barton (who provides bridge maintenance and replacement on behalf of the Village) will be replacing the bridge/culvert in the coming year which should help mitigate this problem.
- **Broad Street:** Stormwater in this business district drains into old terra cotta piping under Broad Street from Loder Street to Cayuga Avenue and is a potential issue should it fail and would create major water damage in the business district.
- **Wastewater Treatment Plant:** The plant is being updated and is located in the floodplain.
- **Water Mains:** These are vulnerable to extreme temperatures and potential failure.

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

- Highway along Susquehanna River and Shepard Creek
- River road, any streets nears the creeks and rivers.
- Places closest to the rivers. Spring St. The glen.

### 9.16.5 Capability Assessment

This section identifies the following capabilities of the local jurisdiction:

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

### Planning and Regulatory Capability

The table below summarizes the regulatory tools that are available to the Village of Waverly.

Table 9.16-6. Planning and Regulatory Tools

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
Planning Capability				



Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
Comprehensive Plan	Yes, 1981	Local	Village Planning Board	Comprehensive Development Plan; currently being updated
Capital Improvements Plan	No	-	-	-
Floodplain Management / Basin Plan	No	-	-	-
Stormwater Management Plan	Yes	County	County Planning/Town of Owego	Tioga County / Town of Owego 2015 – 2020 Stormwater Management Plan
Open Space Plan	No	-	-	-
Stream Corridor Management Plan	No	-	-	-
Watershed Management or Protection Plan	No	-	-	-
Economic Development Plan	Yes	County	County Planning Dept	Tioga County 2020 Strategic Plan
Comprehensive Emergency Management Plan	No	-	-	-
Emergency Operation Plan	Yes	Local	Police	Emergency Management Plan
Post-Disaster Recovery Plan	No	-	-	-
Transportation Plan	No	-	-	-
Strategic Recovery Planning Report	No	-	-	-
Other Plans:	N/A	-	-	-
<b>Regulatory Capability</b>				
Building Code	Yes	State & Local	Code Enforcement	Building Code of NY State
Zoning Ordinance	Yes	Local	Code Enforcement	Chapter 153
Subdivision Ordinance	No	-	-	-
NFIP Flood Damage Prevention Ordinance	Yes	Federal, State, Local	Code Enforcement	Chapter 80
NFIP: Cumulative Substantial Damages	No	-	-	-
NFIP: Freeboard	Yes	State, Local	Code Enforcement	State mandated BFE+2 for residential and non-residential construction
Growth Management Ordinances	No	-	-	-
Site Plan Review Requirements	Yes	Local	Planning Board	Chapter 153-20
Stormwater Management Ordinance	No	-	-	-
Municipal Separate Storm Sewer System (MS4)	No	-	-	-
Natural Hazard Ordinance	No	-	-	-
Post-Disaster Recovery Ordinance	No	-	-	-

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
Real Estate Disclosure Requirement	Yes	State	-	NYS mandate, Property Condition Disclosure Act, NY Code - Article 14 §460-467
Other (Special Purpose Ordinances [i.e., sensitive areas, steep slope])	N/A	-	-	-

### Administrative and Technical Capability

The table below summarizes potential staff and personnel resources available to the Village of Waverly.

**Table 9.16-7. Administrative and Technical Capabilities**

Resources	Is this in place? (Yes or No)	Department/ Agency/Position
<b>Administrative Capability</b>		
Planning Board	Yes	Village Planning Board (Appointed)
Mitigation Planning Committee	Yes	Chief of Police, Clerk-Treasurer
Environmental Board/Commission	No	-
Open Space Board/Committee	No	-
Economic Development Commission/Committee	No	-
Maintenance Programs to Reduce Risk	No	-
Mutual Aid Agreements	No	-
<b>Technical/Staffing Capability</b>		
Planner(s) or engineer(s) with knowledge of land development and land management practices	No	Hire consultants on as needed basis.
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	No	Hire consultants on as needed basis.
Planners or engineers with an understanding of natural hazards	No	Support from County Planning and SWCD
NFIP Floodplain Administrator (FPA)	Yes	Code Enforcement
Surveyor(s)	No	-
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	No	Hire consultants on as needed basis.
Scientist familiar with natural hazards	No	-
Emergency Manager	No	EMO is County Level
Grant writer(s)	No	-
Staff with expertise or training in benefit/cost analysis	No	-
Professionals trained in conducting damage assessments	No	-

### Fiscal Capability

The table below summarizes financial resources available to the Village of Waverly.

**Table 9.16-8. Fiscal Capabilities**

Financial Resources	Accessible or Eligible to Use (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	Yes
Capital improvements project funding	Yes
Authority to levy taxes for specific purposes	Yes
User fees for water, sewer, gas or electric service	Yes
Impact fees for homebuyers or developers of new development/homes	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	N/A

### Community Classifications

The table below summarizes classifications for community program available to the Village of Waverly.

**Table 9.16-9. Community Classifications**

Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	No	-	-
NYSDEC Climate Smart Community	No	-	-
Storm Ready Certification	Yes	County	-
Firewise Communities classification	No	-	-
Natural disaster/safety programs in/for schools	No	-	-
Organizations with mitigation focus (advocacy group, non-government)	No	-	-
Public education program/outreach (through website, social media)	No	-	-
Public-private partnership initiatives addressing disaster-related issues	No	-	-

Note:

N/A Not applicable  
 NP Not participating  
 - Unavailable

The classifications listed above relate to the community's ability to provide effective services to lessen its vulnerability to the hazards identified. These classifications can be viewed as a gauge of the community's capabilities in all phases of emergency management (preparedness, response, recovery and mitigation) and are

used as an underwriting parameter for determining the costs of various forms of insurance. The CRS class applies to flood insurance while the BCEGS and Public Protection classifications apply to standard property insurance. CRS classifications range on a scale of 1 to 10 with class 1 being the best possible classification, and class 10 representing no classification benefit. Firewise classifications include a higher classification when the subject property is located beyond 1000 feet of a creditable fire hydrant and is within 5 road miles of a recognized Fire Station.

Criteria for classification credits are outlined in the following documents:

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

### Self-Assessment of Capability

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

**Table 9.16-10. Self-Assessment Capability for the Municipality**

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

### National Flood Insurance Program

#### NFIP Floodplain Administrator (FPA)

Robert Chisari, Code Enforcement Officer

#### Flood Vulnerability Summary

The municipality does not maintain lists/inventories of properties that have been flood damaged or identify property owners who are interested in mitigation (e.g. elevation, acquisition). The FPA does not make substantial damage and stated that the number of property owners interested in mitigation (elevation or acquisition) and potential funding sources being used for mitigation is unknown.

#### Resources

The FPA is the sole person responsible for floodplain administration. The FPA stated that NFIP administration services or functions include permit review, inspections, and damage assessments. The FPA stated that the



Village does not provide any education or outreach to the community regarding flood hazards/risk or flood risk reduction through NFIP insurance, mitigation, etc. The FPA does not feel there are any barriers to running an effective floodplain management program but does not feel adequately supported and trained to fulfill their responsibilities as the municipal floodplain administrator. The FPA would consider attending continuing education and/or certification training on floodplain management if it were offered in the County for all local floodplain administrators.

### **Compliance History**

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The community in good-standing in the NFIP. According to NYSDEC, the Village has not had a compliance audit conducted.

### **Regulatory**

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The Village actively works to maintain compliance with and good-standing in the NFIP including adoption and enforcement of floodplain management requirements (e.g. regulating all new and substantially improved construction in Special Hazard Flood Areas), floodplain identification and mapping, and flood insurance outreach to the community. The Village works to adopt higher regulatory standards to manage flood risk (i.e. increased freeboard, cumulative substantial damage/improvements). The FPA stated that floodplain management regulations/ordinances meet the FEMA and State minimum requirements. The FPA noted that there are other local ordinances, plans or programs that support floodplain management.

Further, the Village continues to meet and/or exceed the minimum NFIP standards and criteria through adopting higher regulatory standards to manage flood risk (i.e. increased freeboard, cumulative substantial damage/improvements), conducting and facilitating community and public education and outreach, having the designated FPA become a Certified Floodplain Manager through ASFPM, having the FPA pursue relevant continuing education training such as FEMA's Benefit-Cost Analysis, and archiving elevation certificates,

The FPA is not sure if the Village has considered joining the Community Rating System in the past and but would be open to attending a seminar on the program if it were offered locally.

### **Integration of Hazard Mitigation into Existing and Future Planning Mechanisms**

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

### **Planning**

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**Hazard Mitigation Plan:** The Village continues to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Section 7.0.

**Comprehensive Plan:** The Village of Waverly has a Comprehensive Plan (land-use plan). The Plan does not include areas of natural hazard risk (e.g. flood-prone areas, steep slopes) or refer to the Countywide Hazard Mitigation Plan. Disaster recovery/strategic recovery is included.

**Comprehensive Emergency Management Plan:** The Village of Waverly has a Comprehensive Emergency Management Plan. The Plan does not specifically refer to the Hazard Mitigation plan. The Village continues to complete the ongoing updates of the Plan.



### **Regulatory and Enforcement (Ordinances)**

**Zoning Ordinance:** The Village of Waverly's Zoning Ordinance (Chapter 153 of the municipal code) provides for the planned orderly growth of the Village of Waverly in accordance with the Comprehensive Development Plan as adopted by the Village Board of Trustees on March 10, 1981. It is meant to preserve and protect the value of property; to prevent the forces of conflicting land use from destroying the ambient qualities of life as proposed in the Comprehensive Development Plan; to lessen the hazards of congestive trafficking in and through the economic livelihood of Village life; to secure the safety and welfare of Village residents; and to facilitate the timely provision of public services in order to promote the health, safety and general welfare of the public in a manner that is environmentally sound.

**Site Plan Review Ordinance:** The Village of Waverly's Site Plan Review Ordinance (Chapter 153-20 of the municipal code) states that all permitted uses in zoning districts requiring site plan approval by the Planning Board shall have prior site plan review and approval before a building permit is issued for the alteration or construction of any building. The site plan and related drawing shall be submitted by an applicant or agent thereof to the Planning Board and shall be reviewed in accordance with the following procedures and standards and shall be subject to a public hearing.

The Village of Waverly's Planning Board considers natural hazard risk (e.g. the presence of floodplains, steep slopes, etc.) when reviewing site plans. Municipal zoning and subdivision regulations, and/or site plan review processes require developers to take additional actions to mitigate natural hazard risk (e.g. undergrounding utilities, stormwater detention, creating easements in areas/zones of hazard risk) through review of the planning board and all applicable state and local codes.

State and local codes and input from the Code Enforcement Officer are supplied to the Planning Board and/or ZBA to guide their decisions with respect to natural hazard risk management.

**Flood Damage Prevention Ordinance:** The Village of Waverly's NFIP Flood Damage Protection Ordinance (Chapter 80 of the municipal Code) meets the minimum Federal and State NFIP regulatory requirements. It is the purpose of this chapter to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by provisions designed to:

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

### **Operational and Administration**

**Mutual Aid Agreements:** The Village continues to create/enhance/ maintain mutual aid verbal agreements with neighboring communities and the County for continuity of operations during hazard events.



**Damage Assessment Personnel:** The Village will work with CEDAR teams if damage assessments are necessary.

**Data Collection and Inventory Building:** The Village participates in local, county and/or state level projects and programs to develop improved structure and facility inventories and hazard datasets to support enhanced risk assessment efforts and has reviewed the critical facility inventory for this HMP effort.

**Retrofitting/Purchasing Hazard Prone Structures:** The Village moved Village Hall outside the floodplain and will work to retrofit structures located in hazard-prone areas to protect structures from future damage, if identified and necessary.

**Stream Maintenance:** The Village regularly removes stone throughout Cayuta Creek under the direction of the Village Engineer.

The NFIP Floodplain Management functions in the Village are carried out by a combination of DPW Supervisor Jack Pond, Code Enforcement Officer, Robert Chisari and Water Department Supervisor, Patrick Roney. The Village of Waverly does not have a municipal planner or contract a planning firm. The Village does not have any Boards or Committees that address management of natural hazard risk. If needed, the Village contracts with firms that have experience with developing Benefit-Cost Analysis and/or perform Substantial Damage Estimates. Internal staff are responsible for preparing grant applications for mitigation projects. Staff do not receive training or continuing professional education which supports natural hazard risk reduction. The FPA indicated that the Village does not have other hazard management programs in place.

According to the FPA, no Village staff have job descriptions that specifically include identifying and/or implementing mitigation projects/actions or other efforts to reduce natural hazard risk. However, the Chief of Police is part of the County Hazard Mitigation Planning Committee which is seen by the FPA as supporting natural hazard risk reduction and building hazard management capabilities.

### Funding

The Village of Waverly's municipal/operating budget includes line items for mitigation projects/activities (reservoir and water well projects). The Village does not identify Capital Improvements within the budget. The Village has pursued grant funds for mitigation-related projects. The Village does not have any other mechanisms to fiscally support hazard mitigation projects.

### Education and Outreach

The Village uses the Waverly Police Department Facebook Page as a means for communication during hazard incidents but does not have any other public outreach mechanisms/programs in place to inform citizens on natural hazards (e.g. safe use of generators, emergency preparedness, flood hazard information). The Village is not used to its potential at present.

The Village also has a Public Information Officer who remains in contact with the media during emergencies.

The Village conducts and facilitates community and public education and outreach for residents and businesses to include, but not be limited to, the following to promote and effect natural hazard risk reduction:

- Provide and maintain links to the HMP website, and regularly post notices on the County/municipal homepage(s) referencing the HMP webpages.
- Prepare and distribute informational letters to flood vulnerable property owners and neighborhood associations, explaining the availability of mitigation grant funding to mitigate their properties, and instructing them on how they can learn more and implement mitigation.



- Use email notification systems and newsletters to better educate the public on flood insurance, the availability of mitigation grant funding, and personal natural hazard risk reduction measures.
- Work with neighborhood associations, civic and business groups to disseminate information on flood insurance and the availability of mitigation grant funding.

### **Sheltering, Evacuation, and Temporary Housing**

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

Tioga County, through a buildable land analysis, has identified areas suitable for placing temporary and permanent housing. Refer to Section 4.7.5 in Section 4 (County Profile) of Volume 1 of this plan for a description of resources identified by the county to support municipalities with the identification of evacuation, sheltering, and temporary and permanent housing. Each year, during the annual HMP progress meeting, the municipality will discuss their progress in identifying shelters, evacuation routes, and temporary and permanent housing for their community.

### **Temporary and Permanent Housing**

The Village of Waverly does not have any local sites suitable for the placement of temporary housing for residents displaced by a disaster or potential site suitable for relocating houses of the floodplain and/or building new homes once properties in the floodplain are acquired.

While the Village does not have any known locations to relocate/rebuild structures for displaced residents, there are several unoccupied buildings in the Village that could be used; however, they are privately owned. Additionally, the Village intends to work with the Town of Barton to develop mutual agreements with mobile home communities for use of available lots for placement of temporary housing.

### **Evacuation and Sheltering Needs**

The Village of Waverly identified the Red Cross at 15 Frederick Street as a designated emergency shelter. No procedures are currently in place for sheltering. The Village would utilize assistance from the Red Cross. The Village will work with the County to utilize the County mobile app (in development and testing) to identify available routes during an emergency. Due to the nature of location-based hazard events, no evacuation routes are currently in place in the Village however evacuations would be performed based on the local evacuation communication procedure to be developed.

## **9.16.6 Mitigation Strategy and Prioritization**

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

### **Past Mitigation Initiative Status**

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

**Table 9.16-11. Status of Previous Mitigation Actions**

Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
						Cost		
1	Dry Brook Creek Streambank stabilization Project – Moore Street; Delores Sampson Property- District received funding through the FEMA PA program to stabilize eroding streambank to protect house. Rip Rap will be installed along with a constructed plunge pool for approximately 100 feet.	Flood	Property and home were at risk of being undermined due to erosion.	SWCD with support from Village. Of Waverly, Town of Barton	Complete	\$32,325		1. Discontinue, 2. 3. Project completed
						Level of Protection	n/a	
						Damages Avoided; Evidence of Success	Loss of building foundation, structure is not vulnerable to the hazard.	
2	Repair flood wall along Cayuta Creek	Flood	The creek was caving in and building nearby had to be demolished.	Village Engineer	Complete	\$722,463		1. Discontinue, 2. 3. Project completed
						Level of Protection		
						Damages Avoided; Evidence of Success	Elimination of risk.	
3	Remove stone throughout Cayuta Creek	Flood	Stream Maintenance	Village Engineer	Ongoing capability			1. Discontinue 2. 3. Ongoing capability
						Level of Protection		
						Damages Avoided; Evidence of Success		
4	Retrofit structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority. Phase 1: Identify appropriate candidates for retrofitting based on	Flood, Severe Storm, Earthquake	To reduce or eliminate flood risk to structures	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	Ongoing capability			1. Discontinue 2. 3. Ongoing capability
						Level of Protection		
						Damages Avoided; Evidence of Success		



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
	cost-effectiveness versus relocation. Phase 2: Where retrofitting is determined to be a viable option, work with property owners toward implementation of that action based on available funding from FEMA and local match availability.							
5	Purchase, or relocate structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority. Phase 1: Identify appropriate candidates for relocation based on cost-effectiveness versus retrofitting. Phase 2: Where relocation is determined to be a viable option, work with property owners toward implementation of that action based on available funding from FEMA and local match availability.	Flood, Severe Storm	Reduce or eliminate risk	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	Ongoing capability	Cost		1. Discontinue 2.
						Level of Protection		
						Damages Avoided; Evidence of Success		3. Ongoing capability
6	Maintain compliance with and good-standing in the NFIP including adoption and enforcement of floodplain management requirements (e.g. regulating all new and substantially improved construction in Special	Flood, Severe Storms	Reduce risk	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, ISO FEMA	Ongoing capability	Cost		1. Discontinue 2.
						Level of Protection		
						Damages Avoided; Evidence of Success		3. Ongoing capability



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. 3. If discontinue, explain why.
	Hazard Flood Areas), floodplain identification and mapping, and flood insurance outreach to the community. Further, continue to meet and/or exceed the minimum NFIP standards and criteria through the following NFIP-related continued compliance actions identified as Initiatives 7 – X (below).							
7	Begin the process to adopt higher regulatory standards to manage flood risk (i.e. increased freeboard, cumulative substantial damage/improvements).	Flood, Severe Storms	Reduce risk.	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	Ongoing capability	Cost		1. Discontinue
						Level of Protection		2.
						Damages Avoided; Evidence of Success		3. Ongoing capability
8	Conduct and facilitate community and public education and outreach for residents and businesses to include, but not be limited to, the following to promote and effect natural hazard risk reduction: Provide and maintain links to the HMP website, and regularly post notices on the County/municipal homepage(s) referencing the HMP webpages. Prepare and distribute informational letters to flood vulnerable property owners and neighborhood associations, explaining	All Hazards	Reduce risk	Municipality with support from Planning Partners, NYSOEM, FEMA	Ongoing capability	Cost		1. Discontinue
						Level of Protection		2.
						Damages Avoided; Evidence of Success		3. Ongoing capability



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. 3. If discontinue, explain why.
	the availability of mitigation grant funding to mitigate their properties, and instructing them on how they can learn more and implement mitigation. Use email notification systems and newsletters to better educate the public on flood insurance, the availability of mitigation grant funding, and personal natural hazard risk reduction measures. Work with neighborhood associations, civic and business groups to disseminate information on flood insurance and the availability of mitigation grant funding.							
9	Have designated NFIP Floodplain Administrator (FPA) become a Certified Floodplain Manager through the ASFPD and pursue relevant continuing education training such as FEMA Benefit-Cost Analysis.	Flood, Severe Storms	Increase floodplain management capabilities.	NFIP Floodplain Administrator	Ongoing capability	Cost		1. Discontinue
						Level of Protection		2.
						Damages Avoided; Evidence of Success		3. Ongoing capability
10	Archive elevation certificates	Flood, Severe Storm	Improve documentation	NFIP Floodplain Administrator	Ongoing capability	Cost		1. Discontinue
						Level of Protection		2.
						Damages Avoided; Evidence of Success		3. Ongoing capability
11		All Hazards	n/a			Cost		1. Discontinue





Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. 3. If discontinue, explain why.
	Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Section 7.0			Municipality (via mitigation planning point of contacts) with support from Planning Partners (through their Points of Contact), NYSOEM	Ongoing capability	Level of Protection		2.
						Damages Avoided; Evidence of Success		3. Ongoing capability
12	Complete the ongoing updates of the Comprehensive Emergency Management Plans	All Hazards	n/a	Municipality with support from NYSOEM	Ongoing capability	Cost		1. Discontinue
						Level of Protection		2.
						Damages Avoided; Evidence of Success		3. Ongoing capability
13	Create/enhance/maintain mutual aid agreements with neighboring communities for continuity of operations.	All Hazards	n/a	Municipality with support from Surrounding municipalities and County	Ongoing capability	Cost		1. Discontinue
						Level of Protection		2.
						Damages Avoided; Evidence of Success		3. Ongoing capability
14	Identify and develop agreements with entities that can provide support with FEMA/NYSDHSES paperwork after disasters; qualified damage assessment personnel – Improve post-disaster capabilities – damage assessment; FEMA/SOEM paperwork compilation, submissions, record-keeping	All Hazards	n/a	Municipality with support from County, NYSOEM, FEMA	Ongoing capability	Cost		1. Discontinue
						Level of Protection		2.
						Damages Avoided; Evidence of Success		3. Ongoing capability
15	Work with regional agencies (i.e. County and NYSDHSES) to help	All Hazards	n/a	Municipality with support	Ongoing capability	Cost		1. Discontinue
						Level of Protection		2.





Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. 3. If discontinue, explain why.
	develop damage assessment capabilities at the local level through such things as training programs, certification of qualified individuals (e.g. code officials, floodplain managers, engineers).			from County, NYSOEM		Damages Avoided; Evidence of Success		3. Ongoing capability
16	Participate in local, county and/or state level projects and programs to develop improved structure and facility inventories and hazard datasets to support enhanced risk assessment efforts. Such programs may include developing a detailed inventory of critical facilities based upon FEMA's Comprehensive Data Management System (CDMS) which could be used for various planning and emergency management purposes including: Support the performance of enhanced risk and vulnerability assessments for hazards of concern. Support state, county and local planning efforts including mitigation (including updates to the State HMP), comprehensive emergency management, debris management, and land use.	All Hazards	n/a	HMP Coordinator	Ongoing capability	Cost Level of Protection		1. Discontinue 2. 3. Ongoing capability
						Damages Avoided; Evidence of Success		



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing Capability, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. 3. If discontinue, explain why.
	Improved structural and facility inventories could incorporate flood, wind and seismic-specific parameters (e.g. first floor elevations, roof types, structure types based on FEMA-154 "Rapid Visual Screening of Buildings for Potential Seismic Hazards" methodologies). It is recognized that these programs will need to be initiated and supported at the County and/or State level, and will require training, tools and funding provided at the county, state and/or federal level.							

### **Completed Mitigation Initiatives Not Identified in the Previous Mitigation Strategy**

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

- Lincoln Street runoff – this project was completed, and damages have been avoided since this was completed.
- The dam on Dry Brook Creek was restored to pre-1973 capacity and as per the Water Department Supervisor, the dam is up-to-date to all NYSDEC standards.
- The Village offices, including the police department, have been moved out of the floodplain, costing the village \$3,000,000. The project was completed between 2010 and 2011.

### **Proposed Hazard Mitigation Initiatives for the Plan Update**

The Village of Waverly participated in a mitigation action workshop on July 11, 2018 and was provided the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 ‘Selecting Appropriate Mitigation Measures for Floodprone Structures’ (March 2007) and FEMA ‘Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards’ (January 2013).

Table 9.16-12 summarizes the comprehensive-range of specific mitigation initiatives the Village of Waverly would like to pursue in the future to reduce the effects of hazards. Some of these initiatives may be previous actions carried forward for this plan update. These initiatives are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. The four FEMA mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

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

Table 9.16-13 provides a summary of the prioritization of all proposed mitigation initiatives for the Plan update.



Table 9.16-12. Proposed Hazard Mitigation Initiatives

Project Number	Project Name	Description of the Problem	Description of the Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues?	Estimated Timeline	Lead and Support Agencies	Estimated Cost	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category
V. Waverly-1	Public Safety Generator for Municipal Building	See Action Worksheet	See Action Worksheet	All-Hazards	1, 2, 3, 6	Yes	No	1-2 Years	Village of Waverly Clerk	\$200,000	See Action Worksheet	FEMA HMGP, Bond	High	SIP
V. Waverly-2	Broad Street storm drain line replacement	See Action Worksheet	See Action Worksheet	Flooding, Severe Storm	1, 6	No	No	1-2 Years	Waverly Street Department (DPW)	\$3-\$5 million	See Action Worksheet	FEMA HMGP and FMA	High	SIP
V. Waverly-3	Water Main Replacement	Water main along several streets in the Village is in need of replacement.	Water Main Replacement: Ball Street, Garfield Street, Athens Street, Orange Street (extreme cold winters have led to many of the aging water mains to require replacement)	Flooding, Severe Storm, Severe Winter Storm	1, 6	No	No	6 months	Waverly Water Department	\$3.2 million	Increase capacity of water main system, decrease flood vulnerabilities	FEMA HMGP and FMA	Medium	SIP
V. Waverly-4	Storm drain line replacements	Have aged storm drain lines leading to drainage concerns	Village wide storm drain line replacements, many locations in the Village	Flood, Severe Storm, Severe Winter Storm	1, 6	No	No	1-2 Years	Waverly Street and Water Departments	\$1 million	Upgrade storm drains, reduce issues with system, reduce street flooding	FEMA HMGP and FM, USDA Water & Waste Disposal Grant	Medium	SIP
V. Waverly-5	Develop Village job descriptions	Job descriptions in the Village currently do not include staff responsibilities like the FPA	Develop Village job descriptions to include responsibilities for staff including FPA and staff to report and	All-Hazards	All	No	No	Less than 1 year	Village Board, Village FPA	<\$10,000	Increase abilities of staff, better understanding of roles and responsibilities	Municipal Budget	Medium	EAP



Table 9.16-12. Proposed Hazard Mitigation Initiatives

Project Number	Project Name	Description of the Problem	Description of the Solution	Hazard(s) Mitigated	Goals / Objectives Met	Critical Facility (Yes / No)	EHP Issues?	Estimated Timeline	Lead and Support Agencies	Estimated Cost	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category
V. Waverly-6	Outreach to Critical Facilities in Floodplain	and hazard mitigation.  There are three critical facilities, not owned by the village, located in the 1% annual chance flood area. Additionally, location details of each facility is unknown.	document hazard event damages.  The village will locate the critical facilities and inform the owners / operators that their structures are located in the floodplain and need to be protected against a 500-year event. The village will provide mitigation options to the property owners.	Flood	1, 6	Yes	No	Within 1 year	Village Floodplain Administrator	Village Staff Time	Provide outreach to the property owner and informing them of potential flood damage and possible solutions	Municipal Budget	Medium	SIP, EAP

Notes:

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

**Acronyms and Abbreviations:**

CAV	Community Assistance Visit
CRS	Community Rating System
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
FPA	Floodplain Administrator
HMA	Hazard Mitigation Assistance
N/A	Not applicable
NFIP	National Flood Insurance Program
OEM	Office of Emergency Management

**Potential FEMA HMA Funding Sources:**

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

**Timeline:**

The time required to complete the project

**Cost:**

Estimated costs associated with implementation

**Benefits:**

The benefits that implementation of this project will provide.

**Mitigation Category:**





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

**Critical Facility:**


- Yes  - Critical Facility located in 1% floodplain



Table 9.16-13. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community	Total	High / Medium / Low
V. Waverly-1	Public Safety Generator for Municipal Building	1	1	1	1	1	1	1	0	1	1	1	1	0	0	11	High
V. Waverly-2	Broad Street storm drain line replacement	1	1	1	1	0	1	1	0	1	0	1	1	1	0	10	High
V. Waverly-3	Water Main Replacement	1	1	1	1	0	1	0	0	1	0	0	1	0	0	7	Medium
V. Waverly-4	Storm drain line replacements	1	1	1	1	0	1	0	0	0	1	0	1	0	0	7	Medium
V. Waverly-5	Develop Village job descriptions	0	1	1	1	0	1	1	0	0	0	1	0	0	0	6	Medium
V. Waverly-6	Outreach to Critical Facilities in Floodplain	0	1	1	1	0	0	1	1	1	0	0	0	1	1	8	Medium

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



### **9.16.7 Future Needs To Better Understand Risk/Vulnerability**

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None at this time.

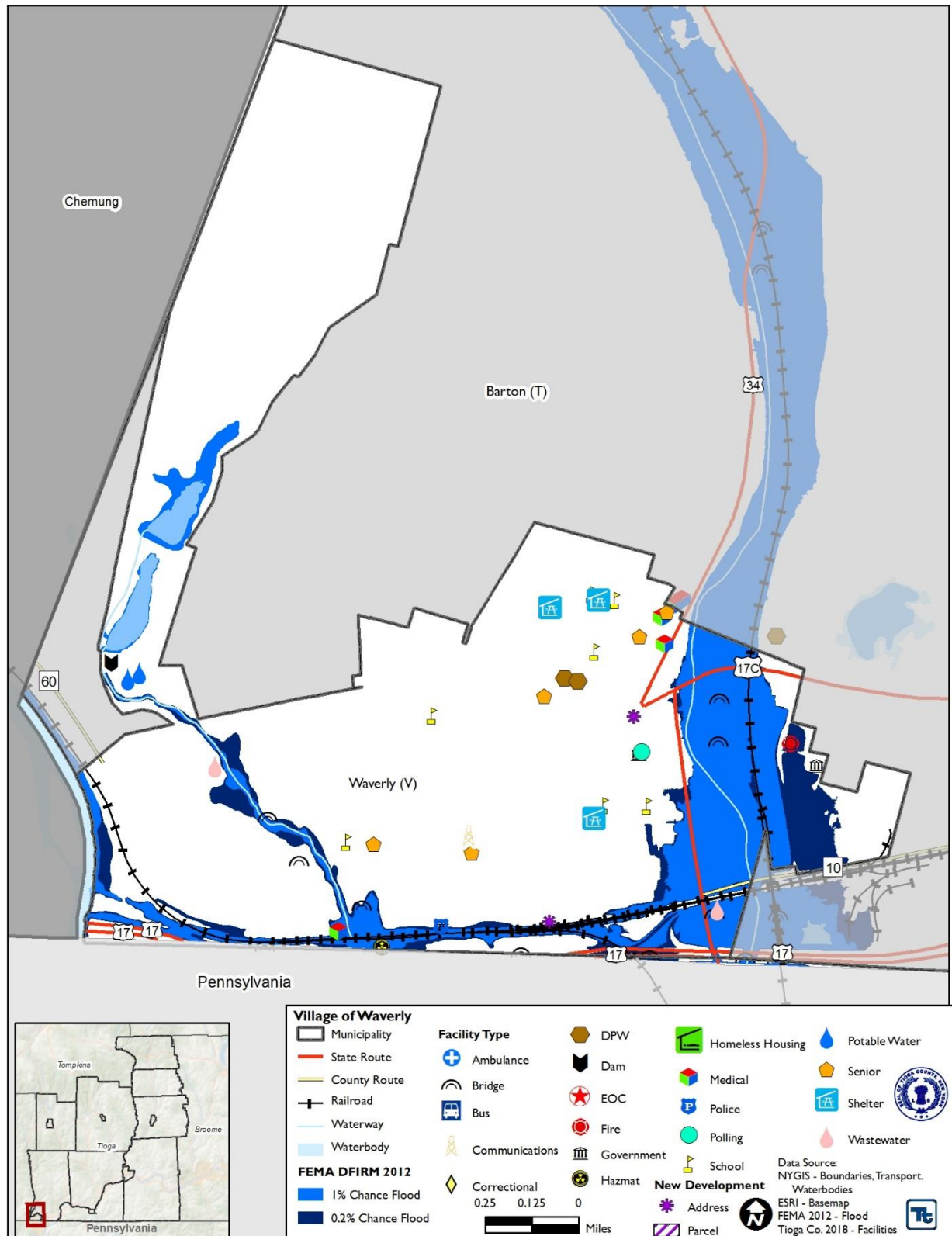
### **9.16.8 Hazard Area Extent and Location**

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



Figure 9.16-1. Village of Waverly Hazard Area Extent and Location





Village of Waverly Action Worksheet			
<b>Project Name:</b>	Public Safety Generator		
<b>Project Number:</b>	V. Waverly-1		
<b>Risk / Vulnerability</b>			
<b>Hazard(s) of Concern:</b>	Wind, ice storms, lightning, extreme heat		
<b>Description of the Problem:</b>	The current generator does not meet the full needs of the facility at 32 Ithaca street Waverly NY. The current generator powers most of the police station e.g. computers and lights. It is unknown if it powers the HVAC. The generator does not power the court or the community center. This delays our ability to process prisoners. The community center acts as a meeting point in the event of an incident at junior/senior high school. The community center is also a shelter of last resort. The village loses power about 3 times a year. Each event is typically less than 24 hours.		
<b>Action or Project Intended for Implementation</b>			
<b>Description of the Solution:</b>	Upgrade the current generator to power the whole police station, the court, and the community center. The upgraded generator would run on natural gas.		
<b>Is this project related to a Critical Facility?</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
<b>Is this project related to a Critical Facility located within the 100-year floodplain?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
<b>Level of Protection:</b>	500-year event	<b>Estimated Benefits (losses avoided):</b>	Continuous power at the public safety building, village court would be functional and would also have overflow ability to shelter people as a last resort during a major incident in the community room.
<b>Useful Life:</b>	30 years		
<b>Estimated Cost:</b>	200,000		
<b>Plan for Implementation</b>			
<b>Prioritization:</b>	High	<b>Desired Timeframe for Implementation:</b>	1 year
<b>Estimated Time Required for Project Implementation:</b>	6 months	<b>Potential Funding Sources:</b>	HMGP, bond
<b>Responsible Organization:</b>	Village of Waverly -Village clerk	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	N/A
<b>Three Alternatives Considered (including No Action)</b>			
<b>Alternatives:</b>	<b>Action</b>	<b>Estimated Cost</b>	<b>Evaluation</b>
	No Action	\$0	The problem continues
	Wind turbines	2 million	Do not have the minimum wind required
	Bury the powerline	millions	Not financially feasible. Penelec is the power company.
<b>Progress Report (for plan maintenance)</b>			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			



Village of Waverly Action Worksheet		
<b>Project Name:</b>	Public Safety Generator	
<b>Project Number:</b>	V. Waverly-1	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
<b>Life Safety</b>	1	Having a public safety generator can ensure life safety systems of the Village Municipal Complex
<b>Property Protection</b>	1	Generator will ensure continuity of operations at the municipal building
<b>Cost-Effectiveness</b>	1	
<b>Technical</b>	1	Technical requirements
<b>Political</b>	1	
<b>Legal</b>	1	Project area located within the Village of Waverly
<b>Fiscal</b>	1	HMGP, Bonds
<b>Environmental</b>	0	
<b>Social</b>	1	Can ensure continuity of municipal services during inclement weather events
<b>Administrative</b>	1	
<b>Multi-Hazard</b>	1	Wind, ice storms, lightning, extreme heat
<b>Timeline</b>	1	Project can be implemented within 1 year
<b>Agency Champion</b>	0	
<b>Other Community Objectives</b>	0	
<b>Total</b>	11	
<b>Priority (High/Med/Low)</b>	High	



Village of Waverly Action Worksheet			
<b>Project Name:</b>	Storm Drainage System Replacement - Business District		
<b>Project Number:</b>	V. Waverly-2		
<b>Risk / Vulnerability</b>			
<b>Hazard(s) of Concern:</b>	Heavy rain/flooding		
<b>Description of the Problem:</b>	The current storm drain system located under/along Broad Street is outdated and in bad condition per the Waverly DPW. When heavy rains hit the area the storm drains are unable to handle the flow of water leading to pooling on Broad Street (the business district of the Village of Waverly). The major concern is that if the outdated piping collapses, water will back up causing catastrophic damage to many businesses on Broad Street. We have had to close the intersection of broad and Pennsylvania Ave. due to flooding. this has happened twice in the last 3 years. Traffic must use side streets when this happens. There are approximately 75 businesses on broad street.		
<b>Action or Project Intended for Implementation</b>			
<b>Description of the Solution:</b>	Phase 1 is to hire a firm to determine the appropriate size of the piping. The current storm drain system running beneath Broad Street will need to be excavated and replaced. An engineering study will need to occur to determine the necessary capacity for the new system. Phase 2 is to implement the engineering findings within 1 year after receiving the report.		
<b>Is this project related to a Critical Facility?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
<b>Is this project related to a Critical Facility located within the 100-year floodplain?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
<b>Level of Protection:</b>	minimum of 100 event will be updated with engineering study	<b>Estimated Benefits (losses avoided):</b>	Minimize any losses related to the flooding of business on Broad Street. It will also minimize costs associated with infrastructure repairs needed because of street flooding.
<b>Useful Life:</b>	75-100 years		
<b>Estimated Cost:</b>	Possibly 3-5 million (estimate will be needed however from engineering firm)		
<b>Plan for Implementation</b>			
<b>Prioritization:</b>	High	<b>Desired Timeframe for Implementation:</b>	Less than 2 years
<b>Estimated Time Required for Project Implementation:</b>	1-2 years	<b>Potential Funding Sources:</b>	HMGP, PDM
<b>Responsible Organization:</b>	The Village of Waverly Department of Public Works. Engineering firm contracted by the Village	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	Engineering study will have to be contracted out.
<b>Three Alternatives Considered (including No Action)</b>			
<b>Alternatives:</b>	<b>Action</b>	<b>Estimated Cost</b>	<b>Evaluation</b>
	No Action	\$0	Zero Impact on the problem
	pervious paving material	250 000	Needs to be done in conjunction with the storm drains
	Install green infrastructure	500,000	not enough spec based upon present street design
<b>Progress Report (for plan maintenance)</b>			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			



Village of Waverly Action Worksheet		
<b>Project Name:</b>	Storm Drainage System Replacement - Business District	
<b>Project Number:</b>	V. Waverly-2	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
<b>Life Safety</b>	1	Flooding can cause catastrophic damage to businesses and endanger individuals within the businesses
<b>Property Protection</b>	1	Flooding can cause catastrophic damage to businesses
<b>Cost-Effectiveness</b>	1	
<b>Technical</b>	1	Technical requirements of this project are feasible to be implemented.
<b>Political</b>	0	
<b>Legal</b>	1	Project area within Village of Waverly
<b>Fiscal</b>	1	FEMA HMGP, PDM
<b>Environmental</b>	0	
<b>Social</b>	1	Can increase resiliency to businesses in the businesses district.
<b>Administrative</b>	0	
<b>Multi-Hazard</b>	1	
<b>Timeline</b>	1	Project can be implemented within 2 years
<b>Agency Champion</b>	1	
<b>Other Community Objectives</b>	0	
<b>Total</b>	10	
<b>Priority (High/Med/Low)</b>	High	



Tioga County Jurisdictional Annex Review Sign-Off Sheet  
Signatures indicate review of annex content by the municipal official

VILLAGE OF WAVERLY  
MUNICIPALITY NAME

**Mayor/Administrator/Supervisor**

PATRICK AYRES, MAYOR  
Name

Signature

Date

**Fiscal/CFO**

MICHELE WOOD, CLERK TREASURER  
Name

Signature

Date

**Building Code Official**

Name / Title

Signature

Date

**Floodplain Administrator**

Name / Title

Signature

Date

**Emergency Manager**

Name / Title

Signature

Date

**Land Use Planner**

Name / Title

Signature

Date

**Public Works Director**

Name / Title

Signature

Date

**Highway Superintendent**

Name / Title

Signature

Date

**Police Department**

DANIEL GELATT, CHIEF OF POLICE  
Name / Title

Signature

Date

**Fire Department**

Name / Title

Signature

Date