

9.11 VILLAGE OF OWEGO

This section presents the jurisdictional annex for the Village of Owego.

A.) HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact	Alternate Point of Contact
Name: Kevin Millar, Mayor Address: 178 Main Street, Owego, NY, 13827 Phone Number: 607-687-1710 Email address: mayor-vofowego@stny.rr.com	Name: Jeffrey Soules, Supt. of Public Works Address: 20 Elm Street, Owego, NY, 13827 Phone Number: 607-687-1101 Email address: Soulesie@hotmail.com

B.) PROFILE

Population

3,896 (estimated 2010 U.S. Census)

Location

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 km²), of which, 2.5 square miles (6.5 km²) of it is land and 0.2 square miles (0.6 km²) 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.

Brief History

The Village of Owego was established in 1787. When the "Town of Tioga" was created from the Town of Union, Owego village was in Tioga. In 1813, Tioga and Owego switched names, putting the village in the same-named town. The current Town of Tioga is now just west of the village. The name is derived from the Iroquois word Ahwaga, meaning "Where the valley widen."

Owego was named by Budget Travel magazine's readers as "The Coolest Small Town" in the United States in a poll.

Governing Body Format

The Village of Owego is governed by the village mayor and board of trustees.

Growth/Development Trends

No major residential/commercial development and major infrastructure development has been identified for the next five (5) years in the municipality.



C.) NATURAL HAZARD EVENT HISTORY SINCE 2000

Tioga County has a history of natural hazard events as detailed in Volume I, Section 5 of this plan. A summary of historical events is provided in each of the hazard profiles and includes a chronology of events affecting the County and its municipalities. Below is presented a summary of events dating from the year 2000 to indicate the range and impact of natural hazard events in this community. Specific damages have been indicated if available from reference or local sources. For details of events prior to 2000, refer to Volume I, Section 5 of this plan.

Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
Severe Storms / Flash Flood	DR-1335	Yes	May 3 – August 12, 2000	\$1.25 M in property damages County-wide.
Wind	N/A	N/A	December 12, 2000	Over \$64 K in property damage County-wide.
Drought	N/A	N/A	November 2001 – January 2002	Three month duration with the lowest PDSI of -3.28 in December.
Tornado F1	N/A	N/A	May 31, 2002	There were seven injuries and \$600 K in property damage County-wide.
Snowstorm	EM-3173	Yes	December 25, 2002	Snowfall totals in Tioga County ranged from 8.3 to 10.3.
Snowstorm	EM-3173	Yes	January 2-4, 2003	\$475 K in property damage County-wide.
Snowstorm	EM-3184	No	February 16-17, 2003	Snowfall totals in Tioga County ranged from 9.5 to 15 inches. The County had over \$152 K in property damage.
Severe Storm	N/A	N/A	July 21, 2003	Approximately \$50 K in property damage County-wide.
Wind	N/A	N/A	September 19, 2003	Approximately \$50 K in property damage County-wide.
Wind	N/A	N/A	October 15, 2003	Over \$58 K in property damage County-wide.
Wind	N/A	N/A	November 13, 2003	Over \$52 K in property damage County-wide.
Flood	N/A	N/A	March 1, 2004	\$40 K in property damages County-wide.
Flash Flood	N/A	N/A	July 7, 2004	The Town of Spencer had \$150 K in property damages.
Remnants of Hurricane Ivan	DR-1565	Yes	September 16-18, 2004	Approximately \$1M in property damage County-wide.
Flash Flood	N/A	N/A	March 28, 2005	Approximately \$70K in property damage County-wide.
Severe Storms and Flooding	DR-1589	Yes	April 2-4, 2005	Approximately \$500K in property damage County-wide.
Drought	N/A	N/A	Summer 2005	Not available.
Severe Storm	N/A	N/A	June 6, 2005	Approximately \$50 K in property damage County-wide.



Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
Flash Flood	N/A	N/A	June 10, 2005	Approximately \$20K in property damage County-wide.
Flood	N/A	N/A	October 25, 2005	The Town of Waverly had \$20 K in property damages from the flooding event.
Flood	N/A	N/A	November 30 – December 1, 2005	The Town of Waverly had \$25 K in property damages from the flooding event.
Flood	N/A	N/A	January 18, 2006	Heavy rainfall caused minor flooding in Tioga County. The Town of Barton had \$10 K in property damages from the flooding event.
Severe Storm and Flooding	DR-1650	Yes	June 26-30, 2006	Over \$105M in property damage County-wide. A total of 5,000 homes were affected, with 500 homes damaged and 10 destroyed. Hardest hit areas were Tioga, Campville, Owego, Nichols, Barton and Apalachin.
Flash Flood	DR-1670	Yes	November 16-17, 2006	Approximately \$35 K in property damages County-wide.
Severe Winter Storm	N/A	N/A	February 13-14, 2007	Snowfall totals in Tioga County ranged from 12 to 18 inches.
Riverine Flood	N/A	N/A	March 15-16, 2007	The Town of Barton had approximately \$5 K in property damage.
Riverine Flood	N/A	N/A	March 25-30, 2007	Not available.
Drought	N/A	N/A	October – November 2007	Not available.
Winter Weather	N/A	N/A	November 17, 2007	Not available.
Heavy Snow	N/A	N/A	December 13, 2007	Not available.
Tornado	N/A	N/A	May 16, 2009	Approximately \$10 K in property damage County-wide.
Flash Flooding	N/A	N/A	September 30 – October 1, 2010	Approximately \$75 K in property damage County-wide.
Heavy Snow	N/A	N/A	March 6-7, 2011	In Tioga County, snowfall totals ranged from 13 to 18 inches.
Severe Storm, Flooding, Straight-Line Winds	DR-1993	Yes	April 27-28, 2011	Approximately \$3 M in property damages County-wide.
Severe Storms	N/A	N/A	May 26, 2011	Approximately \$45 K in property damage County-wide.
Heat Wave	N/A	N/A	July 21-23, 2011	A record high of 100°F occurred.
Remnants of Tropical Storm Lee	DR-4031	Yes	September 7-12, 2011	Over \$477 M in property damage County-wide.

Note: N/A = Not applicable



D.) NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

Rank #	Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard ^{a, c}	Probability of Occurrence	Risk Ranking Score (Probability x Impact)	Hazard Ranking ^b
1	Flood	1% Annual Chance: \$484,747,000 0.2% Annual Chance: \$507,688,000	Frequent	54	High
2	Severe Winter Storm	1% of GBS: \$3,252,390 5% of GBS: \$16,261,950	Frequent	39	High
3	Severe Storm	100-Year MRP: \$0 500-Year MRP: \$38,990 Annualized Loss: \$671	Frequent	30	Medium
4	Earthquake	500-Year MRP: \$1,156,987 2,500-Year MRP: \$10,287,551 Annualized Loss: \$15,278	Occasional	20	Low
5	Drought	Not available	Frequent	18	Low

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

^{b.} High = Total hazard priority risk ranking score of 38 and above

Medium = Total hazard priority risk ranking of 21-37

Low = Total hazard risk ranking 20 or below

^{c.} The valuation of general building stock and loss estimates was based on the default general building stock database provided in HAZUS-MH 2.0 (RSMMeans 2006).

^{d.} Loss estimates are structural values only; does not include the value of contents.

^{e.} Loss estimates represent both structure and contents.

^{f.} The HAZUS-MH earthquake model results are reported by Census Tract.

E.) CAPABILITY ASSESSMENT

This section identifies the following capabilities of the local jurisdiction:

- Legal and regulatory capability
- Administrative and technical capability
- Fiscal capability
- Community classification.

The Village indicates that it has moderate fiscal capability, moderate planning and regulatory capability, and limited administrative and technical capability with a very willing political capability to enact policies or programs to reduce hazard vulnerabilities in the community.



E.1) Legal and Regulatory Capability

Regulatory Tools (Codes, Ordinances., Plans)	Local Authority (Y or N)	Enforcement Authority	Code Citation (Section, Paragraph, Page Number, Date of adoption)
1) Building Code	Y	Local	local code in effect
2) Zoning Ordinance	Y	Local	
3) Subdivision Ordinance	Y	Local	
4) NFIP Flood Damage Prevention Ordinance	Y	Local	
4a) Cumulative Substantial Damages	N	Local	
4b) Freeboard	N	Local	
5) Growth Management	N	Local	
6) Floodplain Management / Basin Plan	N	Local or Watershed	
7) Stormwater Management Plan/Ordinance	N	Local	
8) Comprehensive Plan / Master Plan/ General Plan	Y	Local	
9) Capital Improvements Plan	N	Local or County	
10) Site Plan Review Requirements	N	Local	
11) Open Space Plan	N	Local or County	
12) Stream Corridor Management Plan	N	Local or Watershed	
13) Watershed Management or Protection Plan	N	Local or Watershed	
14) Economic Development Plan	N	County	
15) Comprehensive Emergency Management Plan	Y	Local or County	
16) Emergency Response Plan	Y	Local or County	
17) Post Disaster Recovery Plan	N	Local	LTCR Plan in process
18) Post Disaster Recovery Ordinance	N	Local	
19) Real Estate Disclosure Requirement	Y	State	NYS disclosure requirement
20) Other [Special Purpose Ordinances (i.e., critical or sensitive areas)]		Local or County	

E.2) Administrative and Technical Capability

Staff/ Personnel Resources	Available (Y or N)	Department/ Agency/ Position
1) Planner(s) or Engineer(s) with knowledge of land development and land management practices	N	
2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	
3) Planners or engineers with an understanding of natural hazards	N	
4) NFIP Floodplain Administrator	Y	James Mead, Code Enforcement Officer
5) Surveyor(s)	N	
6) Personnel skilled or trained in "GIS" applications	Y	
7) Scientist familiar with natural hazards	Y	
8) Emergency Manager	Y	
9) Grant Writer(s)	N	
10) Staff with expertise or training in benefit/cost analysis	N	

E.3) Fiscal Capability

Financial Resources	Accessible or Eligible to use (Yes/No/Don't know)
1) Community Development Block Grants (CDBG)	Y
2) Capital Improvements Project Funding	Y
3) Authority to Levy Taxes for specific purposes	DK
4) User fees for water, sewer, gas or electric service	Y
5) Impact Fees for homebuyers or developers of new development/homes	N
6) Incur debt through general obligation bonds	Y
7) Incur debt through special tax bonds	Y
8) Incur debt through private activity bonds	DK
9) Withhold public expenditures in hazard-prone areas	DK
10) State mitigation grant programs (e.g. NYSDEC, NYCDEP)	Y
11) Other	

E.4) Community Classifications

Program	Classification	Date Classified
Community Rating System (CRS)	NP	N/A
Building Code Effectiveness Grading Schedule (BCEGS)	NP	N/A
Public Protection	NP	N/A
Storm Ready	NP	N/A
Firewise	NP	N/A

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

The classifications listed above relate to the community's effectiveness in providing services that may impact its vulnerability to the natural 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 one (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
- The ISO Mitigation online ISO's Public Protection website at <http://www.isomitigation.com/ppc/0000/ppc0001.html>
- The National Weather Service Storm Ready website at <http://www.weather.gov/stormready/howto.htm>
- The National Firewise Communities website at <http://firewise.org/>

F.) MITIGATION STRATEGY**F.1) Past Mitigation Actions/Status**

- HMGP Elevation and Buyout Grants:

Procure funding for structural elevation of 62 residential homes beginning 2012; may be phased project to include additional structures through 2015; buyout or acquire initial 34 homes beginning 2012; may be phased project to include additional structures through 2015

- PA 403 Project to include demolition of numerous hazardous homes beginning 2012; may be phased to include additional structures through 2015. Assessment of structures to be completed by Summer 2012.

Comments: Will need to ascertain if residents abandoned structures temporarily following flooding of September 2011 or if they have permanently relocated. Local condemnation process must be followed and project supported by State and FEMA

HMGP Other Projects:

5% Initiative Projects



- Purchase of Trailer-Mounted Generators, and trailers: Generators needed at various public facilities in the event of 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.
- 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.

Soil Stabilization Projects

- 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 aprox 200 ft from the existing rip rap to the the eastern 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 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

Dry Floodproofing Project

- Floodproofing 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.
- Floodproof historical City Hall Building located at 178 Main Street to minimize flooding effects through mitigation.

Minor Localized Flood Reduction Projects

- Lessen frequency and severity of flooding and decrease potential flooding by installing 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 flooding approximately 30-40 homes and businesses along river’s edge. Also damages roads and causes debris problem. 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.

2006 Mitigation Project	Status	Action
Brick Pond – hydrologic analysis, how does it affect and is affected by Stormwater? Flood Mitigation?	100% complete.	Per NYSDEC requirements Waterman is working with USC and TCSWCD to restore to a wetland complex. Stormwater from the Village will be eliminated



2006 Mitigation Project	Status	Action
		from the system.
Sewer Line along Susquehanna River – bank stabilization need for approximately 4400 feet along river to protect sewer main.	100% complete.	Site of proposed River Walk; an engineering firm is currently writing a proposal for shoreline stabilization, rip rap and sheet pilings.
Owego Creek – <ul style="list-style-type: none"> At the mouth of Owego Creek; stabilize bank and construct handicap fishing access. Finish building levee from school to Monkey Run (~200 yards) 	<ul style="list-style-type: none"> Complete Incomplete 0% 	<p>Fishing access constructed in summer of 2007; which included installation of large rip rap to stabilize the bank in the area.</p> <p>No progress on levee; area will need to be evaluated by Engineer to determine impact on hydrology.</p>
Old Mill Raceway – make improvements to existing berm	Incomplete 0%	DEC, SWCD and Village officials met to discuss options. Engineered study would need to be completed to show that improvements to berm would not affect flooding.
Monkey Run – Wooden Dam blown out	Funding secured thru EWP; dam to be removed in 2012	SWCD evaluated (1/08) and currently investigating ownership and possible solutions with the IDA.
Village of Owego – 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 2006 buyout complete	<p>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.</p> <p>Six homes 7 structures in this area have applied for the FEMA buyout program after the June 2006 flood.</p> <p>2 Houses thru closing process and have been demolished.</p>

F.2) Hazard Vulnerabilities Identified

It is estimated that in the Village of Owego, 1974 residents live within the 1% annual chance flood area (NFIP Special Flood Hazard Area). Of the municipality's total land area, 47.1% is located within the 1% annual chance flood area. \$484,747,000 (86.6%) of the municipality's general building stock replacement cost value (structure and contents) is located within the 1% annual chance flood area.

There are 470 NFIP policies in the community and there are 370 policies located within the 1% annual chance flood area. FEMA has identified 136 Repetitive Loss (RL) including 7 Severe Repetitive Loss (SRL) properties in the municipality.

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)	# Policies in 500-Boundary (3)	# Policies Outside the 500-year Flood Hazard (3)
Barton (T)	36	74	\$1,188,893	1	0	20	20	16

Source:

- (1) Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA Region 2, in April 2012 using the "Comm_Name". These statistics are current as of January 31, 2012. Please note the total number of repetitive loss properties includes the severe repetitive loss properties.
- (2) Total building and content losses from the claims file provided by FEMA Region 2 (current as of January 31, 2012).
- (3) The policy locations used are based on the latitude and longitude provided by FEMA Region 2.

HAZUS-MH estimates that for a 1% annual chance flood, \$12,581,000 (2.2%) of the municipality's general building stock replacement cost value (structure and contents) will be damaged, 439 people may be displaced, 361 people may seek short-term sheltering, and an estimated 1287 tons of debris could be generated. HAZUS-MH estimates the following damage and loss of use to critical facilities in the community as a result of a 1% annual chance flood event:

Name	Type	Exposure		Potential Loss from 1% Flood Event	
		1% Event	0.2% Event	Structure Damage	Content Damages
Owego-Apalachin Central School	School		X		
Owego-Apalachin Central School	School	X	X	13.48	72.72
Owego Elementary School	School	X	X	7.11	38.81
Owego Free Academy	School		X		
Owego-Apalachin Middle School	School		X		

Please refer to the Hazard Profiles for additional vulnerability information relevant to this jurisdiction.

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)	# Policies in 500-Boundary (3)	# Policies Outside the 500-year Flood Hazard (3)
Owego (V)	470	694	\$23,928,133	136	7	370	453	17

Source:

1. Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA Region 2, in April 2012 using the "Comm_Name". These statistics are current as of January 31, 2012. Please note the total number of repetitive loss properties includes the severe repetitive loss properties.
2. Total building and content losses from the claims file provided by FEMA Region 2 (current as of January 31, 2012).
3. The policy locations used are based on the latitude and longitude provided by FEMA Region 2.

F.3) PROPOSED HAZARD MITIGATION INITIATIVES

Note some of the identified mitigation initiatives in Table F 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.

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals and Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Type
1	Construction of a berm the height of the railroad bed along the north side of the Brick Pond	New	Flood	1-1, 1-2	Supervisor, Highway Dept, with support of SWCD	High	High	HMGP	Short	Medium	SP
2	Conduct a Village-Wide Storm Drainage Study to provide recommendations to reduce Stormwater flooding.	N/A	Flood	1-1, 1-4, 1-5	Supervisor, support of SWCD	Low	Low	Local funds	Short	High	PP
3	Facilitate a loan or grant program to help fund elevation of heating, hot water, and electrical systems above the flood elevation.	Existing	Flood	1-1, 2-5	Town administrator	Low	Medium	Local funds	Short	High	PP
4	Study of the drainage system from Barnes Creek, Erie Street, Mountain Avenue, and Davis Hill Road into the Brick Pond.	Existing	Flood	1-1, 1-4, 1-5	Supervisor, support of SWCD	Medium	Medium	Local funds	Short	High	PP
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.	Existing	Flood	1-1, 1-2, 5-1	Supervisor, support of SWCD, ACOE	High	High	HMGP/ACOE	Long	Medium	SP



Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals and Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Type
6	Evaluation of the function and effectiveness of clapper valves on the Brick Pond, Susquehanna River, and Owego Creek.	New	Flood	1-1, 1-7	Town DPW with support of Town Adminstator	Low	Low	Local funds	Short	High	PP
7	Procure funding for structural elevation of 62 residential homes beginning 2012; may be phased project to include additional structures through 2015	Existing	Flood	1-1, 1-2, 1-9	Municipality NFIP Admin NYSOEM FEMA	High	High	HMGP	2012-2015 DOF	High	PP
8	Buyout or acquire initial 34 homes beginning 2012; may be phased project to include additional structures through 2015	Existing	Flood	1-2, 1-9, 3-2	Municipality NFIP Admin NYSOEM FEMA	High	High	HMGP	2012-2012 DOF	High	PP
9	Purchase of Trailer-Mounted Generators, and trailers: Generators needed at various public facilities in the event of 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.	Existing New	Flood Severe Storm Severe Winter Storm Earthquake	1-1, 6-2, 6-3	Municipality NFIP Admin NYSOEM FEMA	High	Medium	HMGP 5% Initiative Project	DOF	High	ES



Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals and Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Type
	KW 200 or similar. \$20,000 each										
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.	Existing New	Flood Severe Storm Severe Winter Storm Earthquake	1-1, 6-2, 6-3	Municipality NFIP Admin NYSOEM FEMA	High	Medium 5% Initiative Project	Local funds	DOF	High	ES
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	Existing	Flood Severe Storm Severe Winter Storm	1-1, 4-1	Municipality NYSOEM FEMA	High	High-Medium	Local funds	DOF	Medium	SP



Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals and Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Type
	event. There are also 2 large trees on either side of the sewer catch 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.	Existing	Flood Severe Storm	1-1, 1-2, 6-3	Municipality NFIP Admin NYSOEM FEMA	High	Low-medium	Local Funds, HMPG	DOF	High	PP
13	Implement minor localized flood reduction projects to lessen frequency and severity of flooding and decrease potential	Existing & New	Flood Severe Storm	1-1, 1-2	Municipality NFIP Admin NYSOEM FEMA	High	High	HMGP and local funds	DOF	High	SP



Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals and Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Type
	<p>flooding.</p> <ul style="list-style-type: none"> -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 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 										



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	river's edge. This would serve to protect buildings' foundations and minimize flooding. Approximately \$10 million.										
14	<p>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</p> <p>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.</p>	Existing & New	Flood Severe Storm	1-1, 1-2	Municipality NFIP Admin NYSOEM FEMA	High	High	FEMA, HMGP, local funds	DOF	High	SP



Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals and Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Type
15	Brick Pond – Hydrologic analysis, how does it affect and 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.)	Existing & New	Flood Severe Storm	1-1, 4-1, 4-6	Municipality TCSWCD NYSDEC NYSOEM FEMA	High	Medium	Local funds	DOF	High	PP
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.)	Existing	Flood Severe Storm Severe Winter Storm	1-1, 4-1	Municipality NFIP Admin NYSOEM USACE FEMA	High	High	Local funds, HMGP	DOF	Medium-High	SP
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.	Existing	Flood Severe Storm Severe Winter Storm	1-1, 1-4	Municipality NFIP Admin NYSOEM USACE FEMA	High	High	Local funds, HMGP	DOF	High	SP
18	Old Mill Raceway – make improvements to existing berm. DEC,	Existing & New	Flood Severe Storm	1-1, 1-4	Municipality NFIP Admin TCSWCD	High	High	Local funds, HMGP	DOF	High	SP



Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals and Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Type
	SWCD and Village officials met to discuss options. Engineered study needs to be completed to show that improvements to berm would not affect flooding		Severe Winter Storm		NYSOEM USACE FEMA						
19	Monkey Run – Wooden Dam blown out In Progress. SWCD evaluated (1/08) and currently investigating ownership and possible solutions with the IDA.	Existing	Flood, Severe Storm, Earthquake	1-1, 1-4	Municipality NFIP Admin TCSWCD NYSOEM USACE FEMA	High	High	Local funds, HMGP	DOF	High	SP
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	Existing	Flood, Severe Storm, Earthquake	1-1, 1-2, 1-9	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	High	High	FEMA Mitigation Grant Programs and local budget (or property owner) for cost share	Long-term DOF	Medium-High*	PP



Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals and Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Type
	to be a viable option, work with property owners toward implementation of that action based on available funding from FEMA and local match availability.										
21	<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. (See residential acquisition initiative #2 above.)</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>	Existing	Flood, Severe Storm	1-2, 1-9, 3-2	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	High	High	FEMA Mitigation Grant Programs and local budget (or property owner) for cost share	Long-term DOF	Medium-High*	PP
22	Maintain compliance with and good-standing in the NFIP including adoption and enforcement of	New & Existing	Flood, Severe Storms	1-1, 1-2, 1-3, 1-6, 1-7, 1-9	Municipality (via Municipal Engineer/NFIP Floodplain Administrator)	High	Low - Medium	Local Budget	Ongoing	High	PP



Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals and Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Type
	<p>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 23-34 (below).</p>				with support from NYSOEM, ISO FEMA						
23	Begin the process to adopt higher regulatory standards to manage flood risk (i.e. increased freeboard, cumulative substantial damage/improvements).	New & Existing	Flood, Severe Storms	1-1, 1-7	Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA	Low	Low	Municipal Budget	Short	High	PP1-5, 1-7, 2-1, 2-2, 3-3, 3-4
24	<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:</p> <ul style="list-style-type: none"> • Provide and maintain links to the HMP website, and regularly post notices on the County/municipal homepage(s) referencing the HMP webpages. • Prepare and distribute informational letters to flood vulnerable property owners and neighborhood associations, explaining the availability of mitigation grant funding to mitigate their properties, and instructing them on how they can learn more and implement mitigation. • Use email notification systems and newsletters to better educate the public on flood insurance, the availability of mitigation grant funding, and personal natural hazard risk reduction measures. • Work with neighborhood associations, civic and business groups to disseminate information on flood insurance and the availability of mitigation grant funding. 										



Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals and Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Type
	See above.	NA	All Hazards	1-5, 1-7, 2-1, 2-2, 3-3, 3-4	Municipality with support from Planning Partners, NYSOEM, FEMA	Low - Medium	Low - Medium	Municipal Budget; HMA programs with local or county match	Short	High	PE
25	Determine if a Community Assistance Visit (CAV) or Community Assistance Contact (CAC) is needed, and schedule if needed.	NA	Flood, Severe Storms	1-6, 1-8	NFIP Floodplain Administrator with support from NYSDEC, NYSOEM, FEMA	Low	Low	Municipal Budget	Short (year 1)	Medium	PP
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.	N/A	Flood, Severe Storms	1-6, 1-8	NFIP Floodplain Administrator	Medium	Low	Municipal Budget	Short (DOF)	High	PP
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	NA	Flood, Severe Storms	1-6, 1-8	NFIP Floodplain Administrator with support from NYSDEC, NYSOEM, FEMA	Low	Low	Municipal Budget	Short (year 1)	Medium	PP



Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals and Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Type
	community's current compliance with the NFIP is established.										
28	Archive elevation certificates	NA	Flood, Severe Storm	1-3, 1-5, 1-6, 1-8, 2-3	NFIP Floodplain Administrator	Low	Low	Local Budget	On-going	High	PP
29	Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Section 7.0	New & Existing	All Hazards	All	Municipality (via mitigation planning point of contacts) with support from Planning Partners (through their Points of Contact), NYSOEM	High	Low – High (for 5-year update)	Local Budget, possibly FEMA Mitigation Grant Funding for 5-year update	Ongoing	High	PP
30	Complete the ongoing updates of the Comprehensive Emergency Management Plans	New & Existing	All Hazards	1-1, 1-7, 3-1, 5-1, 6-2, 6-3, 6-4	Municipality with support from NYSOEM	Low	Low	Local Budget	Ongoing	High	PP
31	Create/enhance/maintain mutual aid agreements with neighboring communities for continuity of operations.	New & Existing	All Hazards	5-3, 5-4	Municipality with support from Surrounding municipalities and County	Low	Low	Local Budget	Ongoing	High	PP
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	NA	All Hazards	5-1, 5-2, 5-3	Municipality with support from County, NYSOEM, FEMA	Medium	Medium	Local budget	Short	Medium	PP



Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals and Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Type
	paperwork compilation, submissions, record-keeping										
33	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).	NA	All Hazards	5-1, 5-2, 5-3	Municipality with support from County, NYSOEM	Medium	Medium	Local budget, FEMA HMA and HLS grant programs	Short – Long-term DOF	Medium	PP
34	<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"> 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. <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>										PP
	See above.	Existing	All Hazards	1-3, 1-6, 1-7, 2-3, 2-5	HMP Coordinator	Medium-High	Medium-High	Mitigation grant programs (PDM or HMGP) with local match	Long term DOF	Medium	PP

Notes:

*Does this mitigation initiative reduce the effects of hazards on new and/or existing buildings and/or infrastructure? Not applicable (NA) is inserted if this does not apply.

Costs:

Where actual project costs have been reasonably estimated:

Low = < \$10,000

Medium = \$10,000 to \$100,000

High = > \$100,000



Where actual project costs cannot reasonably be established at this time:

Low = Possible to fund under existing budget. Project is part of, or can be part of an existing on-going program.

Medium = Could budget for under existing work-plan, but would require a reapportionment of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years.

High = Would require an increase in revenue via an alternative source (i.e., bonds, grants, fee increases) to implement. Existing funding levels are not adequate to cover the costs of the proposed project.

Benefits:

Where possible, an estimate of project benefits (per FEMA’s benefit calculation methodology) has been evaluated against the project costs, and is presented as:

Low = < \$10,000

Medium = \$10,000 to \$100,000

High = > \$100,000

Where numerical project benefits cannot reasonably be established at this time:

Low = Long term benefits of the project are difficult to quantify in the short term.

Medium = Project will have a long-term impact on the reduction of risk exposure to life and property, or project will provide an immediate reduction in the risk exposure to property.

High = Project will have an immediate impact on the reduction of risk exposure to life and property.

Potential Funding Sources:

ACOE = US Army Corps of Engineers

CBDG = Community Development Block Grants

DEC = NY Department of Environmental Conservation

DHSES=Department of Homeland Security Emergency Services

EMPG = Emergency Management Planning Grant

EWP = Emergency Watershed Protection Grants (NRCS)

FMA = Flood Mitigation Assistance Grant Program (FEMA)

HLS = Homeland Security Programs

HMGP= Hazard Mitigation Grant Program (FEMA)

HMA = Hazard Mitigation Assistance (FEMA)

NOAA= National Oceanic and Atmospheric Association

PDM = Pre-Disaster Mitigation Grant Program (FEMA)

RFC = Repetitive Flood Claims Grant Program

SHSP = State Homeland Security Program Grant

SRL = Severe Repetitive Loss Grant Program (FEMA)

WQIP = Water Quality Improvement Project Program (NYSDEC)

Timeline:

Short = 1 to 5 years. Long Term= 5 years or greater. OG = On-going program.

DOF = Depending on funding.

Notes (for Mitigation Type):

1. PP=Prevention and Property Protection: Government, administrative or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations and acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.



2. PE=Public Education and Awareness: Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and school-age and adult education programs.
3. NR=Natural Resource Protection: Actions that minimize hazard loss and also preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
4. SP=Structural Projects: Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.
5. ES=Emergency Services: Actions that protect people and property, during and immediately following, a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities.

G.) PRIORITIZATION OF MITIGATION INITIATIVES

Initiative #	# of Objectives Met	Benefits	Costs	Do Benefits equal or exceed Costs? (Yes or No)	Is project Grant eligible? (Yes or No)	Can Project be funded under existing programs/budgets? (Yes or No)	Priority (High, Med., Low)
1	2	H	H	Y	Y	N	M
2	3	L	L	Y	N	Y	H
3	2	L	M	Y	N	Y	H
4	3	M	M	Y	N	Y	H
5	3	H	H	Y	Y	N	M
6	2	L	L	Y	N	Y	H
7	3	H	H	Y	Y	Y	H
8	3	H	H	Y	Y	Y	H
9	3	H	M	Y	Y	Y	H
10	3	H	M	Y	Y	N	H
11	2	H	H-M	Y	Y	N	M
12	3	H	L-M	Y	Y	Y	H
13	2	H	H	Y	Y	N	H
14	3	H	H	Y	Y	N	H
15	3	H	M	Y	Y	N	H
16	2	H	H	Y	Y	Y	M-H
17	2	H	H	Y	Y	Y	H
18	2	H	H	Y	Y	Y	H
19	2	H	H	Y	Y	Y	H
20	3	H	H	Y	Y	Y	M-H
21	3	H	H	Y	Y	Y	H
22	6	H	L-M	Y	Y	Y	H
23	2	M	L	Y	Y	Y	H
24	6	L-M	L-M	Y	Y	Y	H
25	2	L	L	Y	N	Y	M
26	2	M	L	Y	N	Y	H
27	2	L	L	Y	N	Y	M
28	5	L	L	Y	N	Y	H
29	All	H	L-M	Y	Y	Y	H
30	7	L	L	Y	N	Y	H

Initiative #	# of Objectives Met	Benefits	Costs	Do Benefits equal or exceed Costs? (Yes or No)	Is project Grant eligible? (Yes or No)	Can Project be funded under existing programs/budgets? (Yes or No)	Priority (High, Med., Low)
31	2	L	L	Y	N	Y	M
32	3	M	M	Y	Y	Y	M
33	3	M	M	Y	Y	Y	M
34	5	M-H	M-H	Y	Y	Y	M

Notes: H = High. L = Low. M = Medium. N = No. N/A = Not applicable. Y = Yes.

*This initiative has a Medium priority based on the prioritization scheme used in this planning process (implementation based on grant funding), however it is recognized that addressing repetitive and severe repetitive loss properties is considered a high priority by FEMA and SOEM (as expressed in the State HMP), and thus shall be considered a High priority for all participants in the planning process.

Explanation of Priorities

High Priority = A project that meets multiple objectives (i.e., multiple hazards), benefits exceeds cost, has funding secured or is an on-going project and project meets eligibility requirements for the Hazard Mitigation Grant Program (HMGP) or Pre-Disaster Mitigation Grant Program (PDM) programs. High priority projects can be completed in the short term (1 to 5 years).

Medium Priority = A project that meets goals and objectives, benefits exceeds costs, funding has not been secured but project is grant eligible under, HMGP, PDM or other grant programs. Project can be completed in the short term, once funding is completed. Medium priority projects will become high priority projects once funding is secured.

Low Priority = Any project that will mitigate the risk of a hazard, benefits do not exceed the costs or are difficult to quantify, funding has not been secured and project is not eligible for HMGP or PDM grant funding, and time line for completion is considered long term (1 to 10 years). Low priority projects may be eligible other sources of grant funding from other programs. A low priority project could become a high priority project once funding is secured as long as it could be completed in the short term.

Prioritization of initiatives was based on above definitions: Yes

Prioritization of initiatives was based on parameters other than stated above: Not applicable.

H.) FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

None at this time.

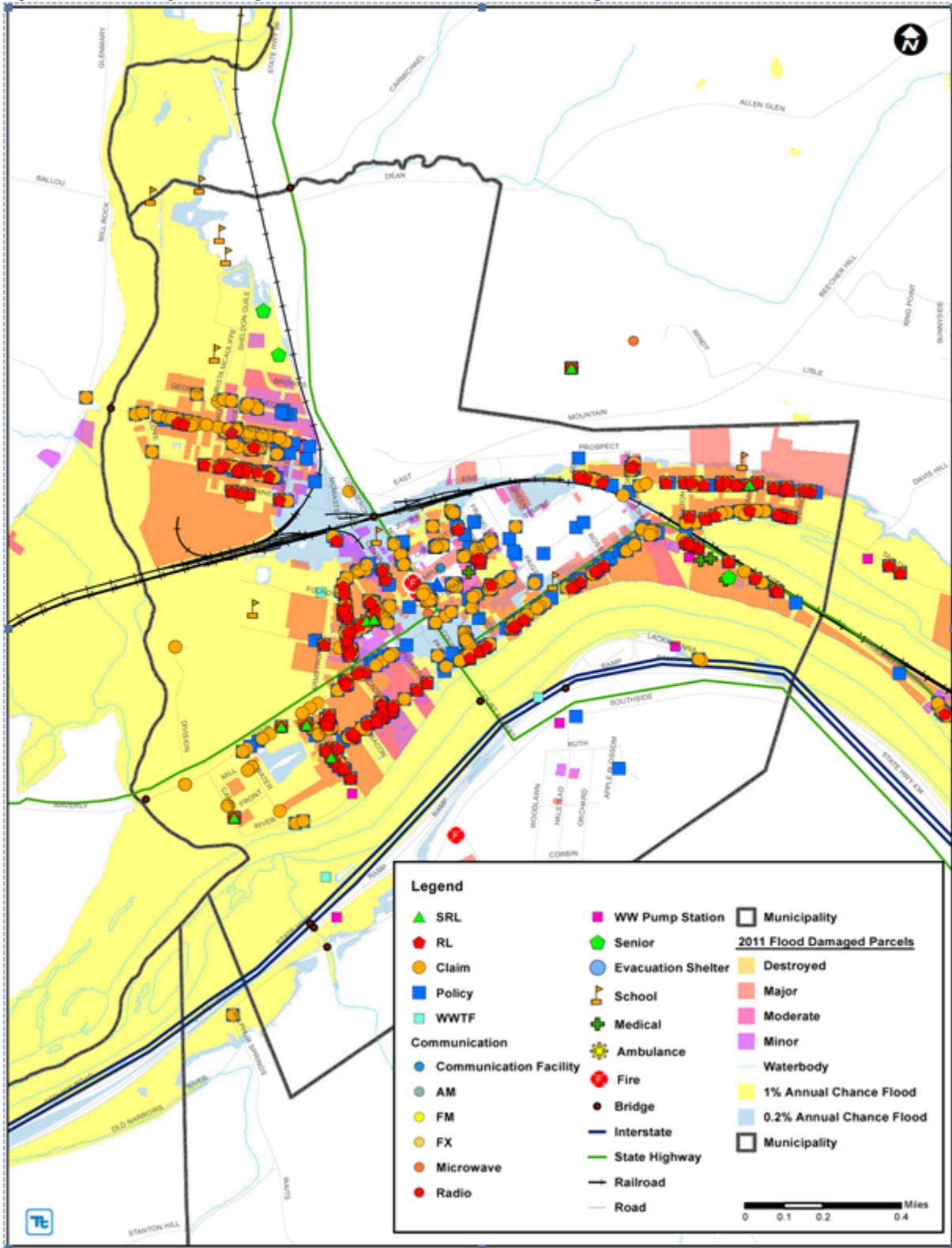
I.) HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map has been generated for the Village of Owego to illustrate the probable areas impacted within the Village of Owego and is provided on the next page. This map is based on the 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 Owego has significant exposure. The Planning Area maps are provided in the hazard profiles within Section 5.4, Volume I of this Plan.

J.) ADDITIONAL COMMENTS

No additional comments at this time.

Figure 9.11-1. Village of Owego Hazard Area Extent and Location Map



Sources: FEMA, 2011

Notes: NFIP = National Flood Insurance Program. RL = Repetitive Loss. SRL = Severe Repetitive Loss. The entire municipality is vulnerable to the following hazards: drought, earthquake, severe storm, severe winter storm and wildfire.