

**9.18 SPECIAL PURPOSE DISTRICT – OWEGO APALACHIN CENTRAL SCHOOL DISTRICT**

This section presents the jurisdictional annex for the Owego Apalachin Central School District.

**A.) HAZARD MITIGATION PLAN POINT OF CONTACT**

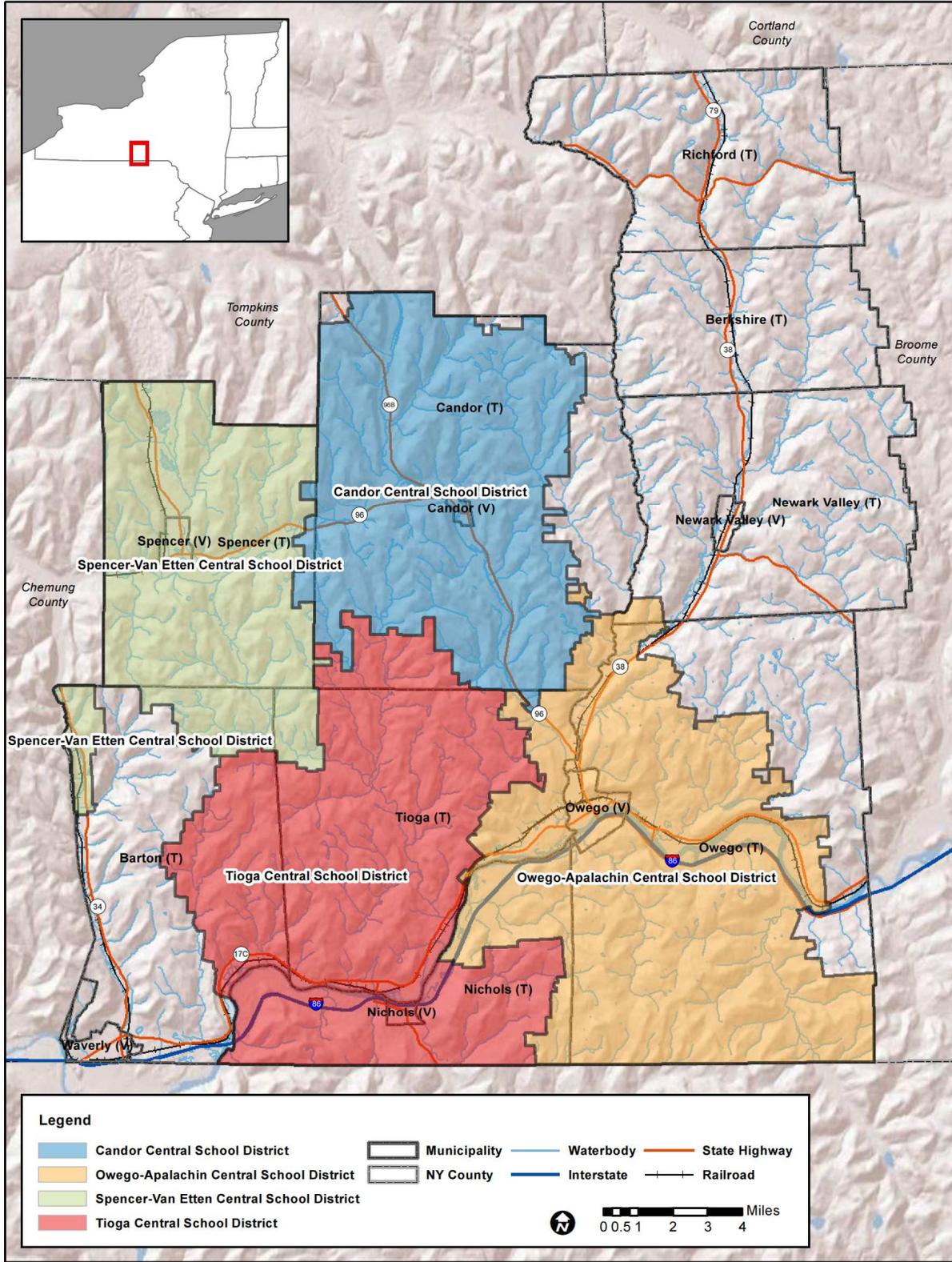
Primary Point of Contact	Alternate Point of Contact
William Russell, Superintendent of Schools 36 Talcott Street Owego, NY 13827 Telephone: 687-6224 e-mail Address: russellw@oacsd.org	Tony Clark, Director of Facilities [Street Address] [City, State ZIP] Telephone: 687-3044 e-mail Address: clarkt@oacsd.org

**B.) DISTRICT PROFILE**

- 1.) **Land Area Served:** 98.5 sq. miles.
- 2.) **Population Served:** 2200 students
- 3.) **Land Area Owned:** The district owns 185.73 acres of property.
- 4.) **List of Critical Infrastructure/Equipment:**
  - a. Buses: 48 @ \$100K (replacement cost) = \$4.8M
  - b. Grounds Maintenance (mowers..etc.) = \$.5M
  - c. Custodial Equipment = \$.3M
  - d. District Owned IT equipment = \$.2M
  - e. Furniture = \$1.5M
  - f. Vehicles (other than buses) = \$.5M
- 5.) **Value of Critical Infrastructure/Equipment:** \$7.8M
- 5.) **List of Critical Facilities (owned by District):** At estimated replacement cost
  - a. Maintenance and Storage (18,500 sf) = \$3M
  - b. Administration (10,500 sf) = \$3.2M
  - c. Owego Elementary (70,000 sf) = \$15.5M
  - d. High School and Middle School (190,000 sf) = \$38M
  - e. Athletic Fields = \$3M
  - f. Apalachin Elementary (64,000 sf) = \$12.8M
  - g. Bus Garage (17,000 sf) = \$2.5M
- 7.) **Value of Critical Facilities:** \$78M
- 8.) **Value of Area Served:** This information is not available at this time.

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**C.) OUTLINE OF AREA SERVED**



Source: Tioga County, 2012



**D.) CURRENT AND ANTICIPATED SERVICE TRENDS**

Enrollment: The school district experienced significant reductions in enrollment over the past 20 years, however the enrollments seem to have stabilized at around 2,150 students for the past few years.

**E.) NATURAL HAZARD EVENT HISTORY**

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.

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Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
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.
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.



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Type of Event	FEMA Disaster # (if applicable)	County Designated?	Date	Approximate Damage Assessment
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

**F.) NATURAL HAZARD RISK RANKING**

Rank #	Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard <sup>a, c</sup>	Probability of Occurrence	Risk Ranking Score (Probability x Impact)	Hazard Ranking <sup>b</sup>
1	Flood	1% Annual Chance: \$1,415,064,000 0.2% Annual Chance: \$1,470,769,000	Frequent	51	High
2	Severe Winter Storm	1% of GBS: \$11,387,700 5% of GBS: \$56,938,500	Frequent	39	High
3	Severe Storm	100-Year MRP: \$0 500-Year MRP: \$468,003 Annualized Loss: \$4,280	Frequent	30	Medium
4	Earthquake	500-Year MRP: \$283,213 2,500-Year MRP: \$3,274,159 Annualized Loss: \$3,199	Occasional	20	Low
5	Drought	Not available	Frequent	18	Low

- <sup>a.</sup> Building damage ratio estimates based on FEMA 386-2 (August 2001)
- <sup>b.</sup> 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
- <sup>c.</sup> 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).
- <sup>d.</sup> Loss estimates are structural values only; does not include the value of contents.
- <sup>e.</sup> Loss estimates represent both structure and contents.
- <sup>f.</sup> The HAZUS-MH earthquake model results are reported by Census Tract.

**G.) EXISTING APPLICABLE HAZARD MITIGATION CODES, ORDINANCES OR POLICIES**

This information is not available at this time.

**H.) EXISTING APPLICABLE NATURAL HAZARDS MITIGATION ASSOCIATED PLANS AND/OR DOCUMENTS**

This information is not available at this time.

**I.) DISTRICT MIGITATION RELATED CLASSIFICATIONS**

District Classifications		
Program	Classification	Date Classified
Public Protection	NP	NA
Fire Wise	NP	NA
Storm Ready	NP	NA

**DAMAGE HISTORY AND PREVIOUS OR ONGOING MITIGATION INITIATIVES**

The OACSD Maintenance Building, 75 Elm Street, Owego, NY sustained damages of approximately \$60,000 during a flood in 2006. The flood event became a FEMA Disaster Declaration (Unsure as to DR #) and the district received FEMA reimbursement for the damages.

The OACSD Elementary School Building (1 Sheila McCauley Drive, Owego, NY), High School and Middle School Building and Associated Athletic Fields (1 Sheldon Guile Boulevard, Owego, NY), Maintenance and Storage Buildings (75 Elm Street, Owego, NY) and Administration Building (36 Talcott Street, Owego, NY) all sustained substantial damage from the remnants of Tropical Storm Lee on Sept 7 and 8, 2011. These damages will be covered under FEMA (DR-4031-NY) in an estimated aggregate claim amount of approximately \$30M.

Anticipated Mitigation to be implemented under DR-4031-NY:

The Owego Elementary School has been determined to be damaged in excess of 50% making it eligible for replacement under the FEMA “50% Rule”. It is likely the replacement school will be constructed on the current site and will be elevated to a level (base floor elevation >= 500 year flood + 1 foot) thereby significantly reducing the risk that it will be damaged in any future flood event.

It is anticipated that the Owego Maintenance, Storage and Administration Buildings will be determined to be “substantially damaged” buildings under NFIP regulations and will be eligible for FEMA reimbursement for the cost of repair and NFIP mandated flood plain compliance measures. The district will be presenting plans to FEMA to relocate these buildings outside the flood plain at a net cost which is cost competitive with repair and flood proofing the existing buildings on their current sites. If FEMA agrees, these buildings will be relocated outside the flood plain, making damage during future floods unlikely.

FEMA has agreed to fund approximately \$500K in dry flood proofing measures (primarily flood proof doors and elevation of air intakes to roof level) on all areas of the building that were damaged under DR-

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4031-NY. The remainder of the building not damaged during DR-4031-NY is at an elevation above the 500 year flood plain and hence unlikely to flood. It is believed that the dry flood proofing measures implemented as a result of DR-4031-NY will leaving this building with substantially lowered risk of flooding during future storms.

The other district buildings (Bus Garage and Apalachin Elementary School) are not located in the floodplain and are at minimal risk of flooding.



J.) PROPOSED HAZARD MITIGATION INITIATIVES

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
2	Severe stream bank erosion occurred, as a result of DR-4031-NY, on the east bank of Owego Creek just North of the Army Corps levee	Existing	Flood	1-1, 4-1, 4-4	Town/Village of Owego Administration, OACSD, TCSWD	Medium	Medium	HMGP with local match	Short	High	SP

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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
	protecting the west side of the OACSD campus. If the stream bank is not reinforced with large stone and the channel obstructions cleared, there is a risk during a future flood, that Owego Creek will break through its east bank and severely flood the OACSD campus. The Athletic Field complex on the west side of the OACSD campus would be particularly prone to damage if this happened. Complete replacement of the athletic field complex is estimated to cost approximately \$3M.										

**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 Project 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.

**K.) PRIORITAZATION 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	5	M	M	Y	N	N	M
2	3	M	M	Y	Y	Y	H

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

**L.) FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY**

None identified at this time.

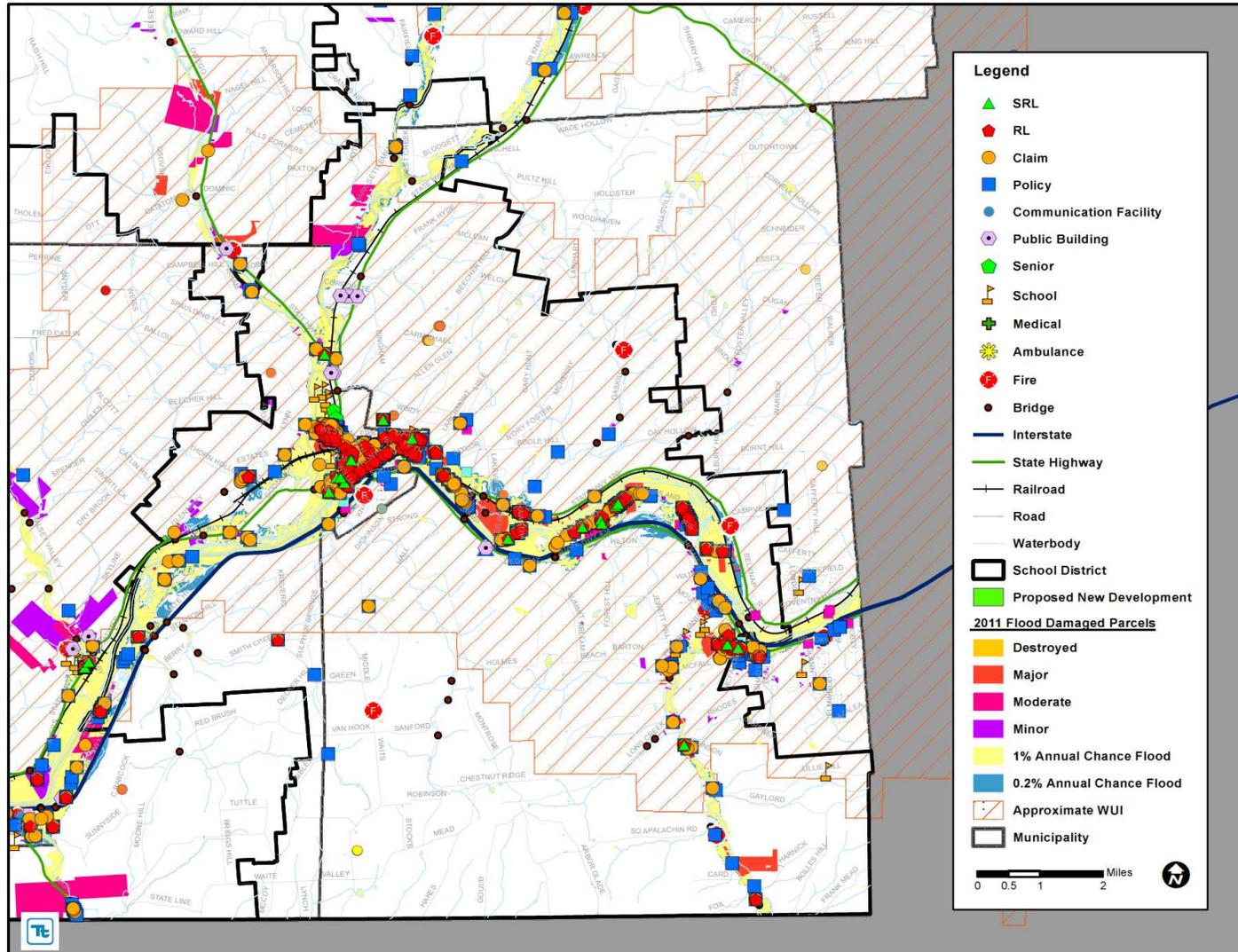
**M.) HAZARD AREA EXTENT AND LOCATION**

A hazard area extent and location map has been generated and is provided below for the Owego Apalachin Central School District to illustrate the probable areas impacted within the Owego Apalachin Central School District. 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 Owego Apalachin Central School District has significant exposure. The Planning Area maps are provided in the hazard profiles within Section 5.4, Volume I of this Plan.

**N.) ADDITIONAL COMMENTS**

No additional comments at this time.

Figure 9.19-1. 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, and severe winter storm.