TOWN OF LEWISTON
1375 Ridge Road
Lewiston, New York 14092
(716) 754-8213
www.townoflewiston.us

Town of Lewiston
RESOLTION NO. 2017 – 6
Niagara County NY Hazard Mitigation Plan

WHEREAS, Town of Lewiston, with the assistance from Witt O'Brien's, has gathered information and prepared the Niagara County NY Hazard Mitigation Plan, and

WHEREAS, the Niagara County NY Hazard Mitigation Plan has been prepared in accordance with the Disaster Mitigation Act of 200; and

WHEREAS, the Town of Lewiston, NY is a local unit of government that has afforded the citizens an opportunity to comment and provide input in the Plan and the actions in the Plan; and

WHEREAS, the Town of Lewiston, NY have reviewed the Plan and affirms that the Plan will be updated no less than every five years.

NOW THERFORE, BE IT RESOLVED by the Town Board that the Town of Lewiston, NY adopts the Niagara County NY Hazardous Mitigation Plan as this jurisdiction's Natural Hazard Mitigation Plan and resolves to execute the actions in the Plan.

ADOPTED this 27th day of March, 2017 at the meeting of the Town Board

Supervisor Steve Broderick

Town Clerk Donna R. Garfinkel

SEAL

11 Town of Lewiston

Local Hazard Identification, Risk Assessment, Capability Assessment, and Mitigation Strategy

11.1 Introduction

This chapter focuses on the hazards, risks, vulnerabilities, and mitigation capabilities identified for the Town of Lewiston. The hazard mitigation projects that will directly impact the town are also included in this chapter. This chapter presents information specific and unique to the Town which was considered in the development of the Plan and meets the specific requirements of the Interim Final Rule (IFR) with regard to hazards and risks in the Town of Lewiston.

11.2 Interim Final Rule for Hazard Identification and Risk Assessment

Requirement §201.6(c)(2): *The plan shall include a risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards.*

Requirement §201.6(c)(2)(i): *[The risk assessment shall include a] description of the type...location and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.*

Requirement §201.6(c)(2)(ii): *[The risk assessment shall include a] description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community.*

Requirement §201.6(c)(2)(ii): *[The risk assessment]* ***must*** *also address National Flood Insurance Program (NFIP) insured structures that have been repetitively damaged floods*

Requirement §201.6(c)(2)(ii)(A): *The plan* ***should*** *describe vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard area.*

Requirement §201.6(c)(2)(ii)(B): *[The plan* ***should*** *describe vulnerability in terms of an] estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(ii)(A) of this section and a description of the methodology used to prepare the estimate.*

Requirement §201.6(c)(2)(ii)(C): *[The plan* ***should*** *describe vulnerability in terms of] providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.*

Requirement §201.6(c)(2)(iii): *For multi-jurisdictional plans, the risk assessment* ***must*** *assess each jurisdiction's risks where they vary from the risks facing the entire planning area.*

In accordance with IFR requirements, and as part of its efforts to support and encourage hazard mitigation initiatives, the Team prepared this general assessment of the hazards that have the potential to impact the Town of Lewiston. This section provides an overview of past hazard events in the Town and descriptions of potential hazards to the Town.

11.3 Hazard Profiles

This chapter addresses the best available local hazard data where such available data is different from county level data. If municipal-level data is not available, county-level data will be used and referenced from Chapter 4 (Hazard Profiles) and Chapter 5 (Niagara County). The Town of Lewiston participated in all hazard identification and qualitative assessment exercises. The results of those exercises are also included in this chapter.

11.3.1 Overview of the Town of Lewiston's History of Hazards and Potential Hazards

Numerous federal agencies maintain a variety of records regarding losses associated with natural hazards. Unfortunately, no single source is considered to offer a definitive accounting of all losses. The Federal Emergency Management Agency (FEMA) maintains records on federal expenditures associated with declared major disasters. The United States Army Corps of Engineers (USACE) and the Natural Resources Conservation Service (NRCS) collect data on losses during the course of some of their ongoing projects and studies. Additionally, the National Oceanic and Atmospheric Administration's (NOAA) National Climatic Data Center (NCDC) database collects and maintains data about natural hazards in summary format. The

data includes occurrences, dates, injuries, deaths, and costs. Many of these databases and other data collection services, including the NCDC, have inherent data limitations when searching for information at a scale as small as a single municipality. The best available data and records were used throughout this section.

Potential Hazards to the Town of Lewiston

In the initial identification process, the Team considered potential hazards to identify those with the most chance to significantly affect the planning area. The hazards include those that have occurred in the past and may occur in the future, including the hazards identified in the 2009 Hazard Mitigation Plan. A variety of sources were used to develop the list of hazards considered by the Team. These included national, regional, and local sources such as emergency operations plans, the 2014 New York State Hazard Mitigation Plan, the 2009 Niagara County Hazard Mitigation Plan, FEMA's *How-To Series,* websites, published documents, databases, and maps, as well as discussion among the Team members.

In the initial phase of the planning process, the Team considered 37 natural, human-caused, and technological hazards and the risks they create for the County, then for each municipality, as related to material assets, infrastructure, and people. The hazards initially considered, and the determination as to the treatment of those hazards, are shown in Table 11.3.1-1.

Table 11.3.1-1
Preliminary Hazard Identification and Determinations
Niagara County and the Town of Lewiston

FEMA's List of Natural Hazards	2014 New York State Hazard Mitigation Plan	2009 Niagara County Hazard Mitigation Plan	2016 Niagara County Hazard Mitigation Plan	2016 Town of Lewiston Hazards
Avalanche	✓			
Climate Change	✓			
Coastal Erosion	✓		✓	
Coastal Storm			N/A	N/A
Drought	✓		✓	✓
Earthquake	✓	✓	✓	✓
Epidemic		✓	✓	✓
Expansive Soils	✓			
Extreme Temperatures	✓			
Flood	✓	✓	✓	✓
Fog			✓	✓
Hailstorm	✓		✓	✓
High Wind	✓		✓	✓
Hurricane	✓			
Ice Jam	✓		✓	
Ice Storm	✓		✓	✓

FEMA's List of Natural Hazards	2014 New York State Hazard Mitigation Plan	2009 Niagara County Hazard Mitigation Plan	2016 Niagara County Hazard Mitigation Plan	2016 Town of Lewiston Hazards
Land Subsidence			✓	✓
Landslide	✓			
Levee Failure	✓		✓ (Erie Canal)	✓
Sea Level Rise	✓			
Severe Storm	✓	✓	✓	✓
Severe Winter Storm		✓	✓	✓
Thunderstorm			✓	✓
Tornado	✓	✓	✓	✓
Tsunami	✓			
Volcano	✓			
Wildfire	✓		✓ (grass fires)	✓
Salt Water Intrusion				
Human-Caused Hazards				
Air Contamination		✓	✓	✓
Conventional Bomb/IED			✓	
Dam Failure			✓	✓
HazMat – Fixed Site		✓	✓	✓
HazMat – Transportation		✓	✓	✓
Power Failure		✓	✓	✓
Terrorism/WMD		✓	✓	✓
Transportation Incidents		✓	✓	✓
Drinking Water Contamination			✓	✓

The following pages address the 23 hazards identified above by the Town of Lewiston. A description of the hazard, the location of the hazard, the extent and severity of the hazard, the potential impact to life and property that the hazard may have, past occurrences of the hazard, and the probability of future occurrences of the hazard has been addressed for each hazard where a vulnerability assessment is included.

All identified hazards for this Plan are fully profiled in Chapter 4 (Hazard Profiles). This section will address the local jurisdiction vulnerabilities. Table 11.3.1-2 lists the annualized probabilities of occurrence of each hazard affecting the entirety or any portion of the planning area using the best available data. Unless otherwise noted in the vulnerability assessment below, the probability for the county can also be assumed for the municipality.

Table 11.3.1-2
Probability of Hazard Event Occurrence

Hazard	Probability of Occurrence
Drought	Low
Earthquake	Low
Epidemic	Low
Flood	High
Fog	High
Hail	High
High Wind	High
Ice Storm	Low
Land Subsidence	Low
Levee Failure	Low
Severe Storm/Thunderstorm	High
Severe Winter Weather	High
Tornado	Low
Wildfire	High
Air Contamination	High
Dam failure	Low
HazMat - Fixed site	High
HazMat - Transport	High
Power Failure	High
Terrorism/WMD	Low
Transportation Incidents	High (road), Moderate (air), and low (rail and water)
Drinking Water Contamination	Low

11.4 Vulnerability Assessment

This section focuses on the vulnerabilities identified for the Town of Lewiston. This section only presents information specific and unique to the Town which was considered in the development of the Plan and meets the specific requirements of the Interim Final Rule (IFR) with regard to hazards and risks in the Town of Lewiston.

11.4.1 Interim Final Rule for Assessing Vulnerability

Requirement §201.6(c)(2)(ii)(A): *The plan* ***should*** *describe vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard area.*

Requirement §201.6(c)(2)(ii)(B): *[The plan* ***should*** *describe vulnerability in terms of an] estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(ii)(A) of this*

section and a description of the methodology used to prepare the estimate.

Requirement §201.6(c)(2)(ii)(C): *[The plan **should** describe vulnerability in terms of] providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.*

Requirement §201.6(c)(2)(iii): *For multi-jurisdictional plans, the risk assessment **must** assess each jurisdiction's risks where they vary from the risks facing the entire planning area.*

11.4.2 Introduction and Methodology

This sections identifies the Town of Lewiston's assets at risk, as well as vulnerability to each hazard where data is available. For each assessed hazard, the Team addressed the impact that each hazard could potentially have on the jurisdiction. Effort was made to evaluate current structures, infrastructure, and critical facilities at risk, as well as identified future projects. Where data was available, the Team evaluated potential dollar losses to vulnerable structures. The Plan evaluates risk and assets for all participating jurisdictions in Niagara County. This section focuses only on the Town of Lewiston.

Where data was available, the hazards profiled in Chapter 4 (Hazard Profiles) were quantitatively ranked by the severity and likelihood of occurrence. All hazards also received an overall qualitative analysis as provided in Chapter 4. Where quantitative data is not available, qualitative responses were used to identify the vulnerability to the hazards.

The Team utilized Risk Analysis Worksheets to determine the frequency, severity, risk class, seasonal patterns, probable duration, speed of onset, and noted risks identified with each hazard. The methodologies are provided below:

FREQUENCY: How often is this hazard likely to develop in your jurisdiction?

Frequency	Description
Highly Likely	Nearly 100% probability in the next year
Likely	10% - 100% probability in the next year or at least 1 chance over the next 10 years
Possible	1% - 10% probability or at least one chance in the next 100 years
Unlikely	Less than 1% chance in the next 100 years.

SEVERITY: What is the expected extent of damage caused by this type of hazard?

Severity	Description
Catastrophic	More than 50% of the jurisdiction affected
Critical	25% - 50% of the jurisdiction affected
Limited	10% - 25% of the jurisdiction affected

Negligible	Less than 10% of the jurisdiction affected

RISK CLASS: What is the classification of the overall risk posed to the jurisdiction?

	Negligible	Limited	Critical	Catastrophic
Highly Likely	C	B	A	A
Likely	C	C	B	A
Possible	D	C	B	B
Unlikely	D	D	C	C

SEASONAL PATTERN: When will hazard most likely occur?

PROBABLE DURATION: How long would this type of event typically impact the jurisdiction?

SPEED OF ONSET: How much advance warning does the jurisdiction typically have prior to onset of this type of event?

RISKS: What types of impacts does this hazard typically cause to the jurisdiction?

The following table provides a summary of the risk assessment findings. Hazards ranked in Class A and B, and where data is available, are considered hazards of higher concern and are included in this Vulnerability Assessment.

Table 11.4.2-1
Summary of Town of Lewiston Risk Assessment Data

Hazard	Ranking	Disposition in the 2016 Vulnerability Assessment
Drought	Frequency: Possible Severity: Limited Risk Class: C	Modest Concern
Earthquake	Frequency: Likely Severity: Critical Risk Class: B	Higher Concern
Epidemic	Frequency: Unlikely Severity: Limited Risk Class: D	Modest Concern
Flood	Frequency: Likely Severity: Critical Risk Class: B	Higher Concern
Fog	Frequency: Possible Severity: Negligible Risk Class: D	Modest Concern
Hailstorm	Frequency: Likely	Modest Concern

Hazard	Ranking	Disposition in the 2016 Vulnerability Assessment
	Severity: Negligible Risk Class: C	
High Wind	Frequency: Likely Severity: Critical Risk Class: B	Higher Concern
Ice Storm	Frequency: Likely Severity: Critical Risk Class: B	Higher Concern
Land Subsidence	Frequency: Unlikely Severity: Negligible Risk Class: D	Modest Concern
Levee Failure	Frequency: Unlikely Severity: Catastrophic Risk Class: C	Modest Concern
Severe Storm	Frequency: Highly likely Severity: Critical Risk Class: A	Higher Concern
Severe Winter Storm	Frequency: Highly likely Severity: Critical Risk Class: A	Higher Concern
Thunderstorm	Frequency: Highly likely Severity: Limited Risk Class: B	Higher Concern
Tornado	Frequency: Unlikely Severity: Critical Risk Class: C	Modest Concern
Wildfire (Grassfire)	Frequency: Possible Severity: Limited Risk Class: C	Modest Concern
Air Contamination	Frequency: Unlikely Severity: Catastrophic Risk Class: C	Modest Concern
Dam Failure	Frequency: Unlikely Severity: Catastrophic Risk Class: C	Modest Concern
Hazardous Materials – Fixed Site	Frequency: Possible Severity: Critical Risk Class: B	Higher Concern
Hazardous Materials – Transport	Frequency: Likely Severity: Critical Risk Class: B	Higher Concern
Power Failure	Frequency: Likely Severity: Limited	Modest Concern

Hazard	Ranking	Disposition in the 2016 Vulnerability Assessment
	Risk Class: C	
Terrorism/WMD	Frequency: Unlikely Severity: Catastrophic Risk Class: C	Modest Concern
Transportation Incidents	Frequency: Highly likely Severity: Negligible Risk Class: C	Modest Concern
Drinking Water Contamination	Frequency: Unlikely Severity: Catastrophic Risk Class: C	Modest Concern

11.4.3 Town of Lewiston Vulnerability

The Town of Lewiston was formed in 1823 and is located on the western edge of Niagara County. Lewiston is bordered to the west by the Niagara River, which is an international border with Canada. The town is situated just north of the Niagara Escarpment. The Niagara Power Reservoir is located within the town. The municipality encompasses 37.12 square miles, and 16,262 people reside within the town (US Census 2010). As of the 2010 Census, the town contains 6,065 households and 4,232 families, with a population density of 438.09 people per square mile. The median household income in the town was $61,737, with 4.4% of the population residing below the poverty line.[1]

There has been no development in hazard prone areas since the 2009 plan was adopted and there is no development planned in hazard-prone areas for the foreseeable future.

11.4.3.1 County Building Stock Vulnerability

There are an estimated 1,372 residential housing units in the Town with a median value of $140,900 for owner-occupied units.[2]

Critical assets in the Town of Lewiston are listed in Table 11.4.3.1-1.

[1] http://www.city-data.com/city/Lewiston-New-York.html
[2] http://www.usa.com/lewiston-ny-housing.htm

Chapter 11. Town of Lewiston

Table 11.4.3.1-1
Town of Lewiston Critical Assets

Name	Address	Owner	Usage	Square Feet	Occu-pancy	Estimated Monetary Value
Lewiston-Queenston Bridge	1451 Niagara River Parkway	Niagara Falls	Travel	N/A	N/A	100 million
Multinat Inc. DBA=WTOR Radio	Birach Broadcasting Company 21700 Northwestern Hwy., Tower 14, Suite 1190 Southfield, MI 48075	Not available	Cell Phones	N/A	—	2 million
New York Power Authority	5777 Lewiston Road	New York Power Authority Mailroom - 10- B 123 Main Street White Plains, NY 10601- 3170	Power generator	N/A	Multi	2 billion
Niagara Falls Storage Site	1397 Pletcher Road Latitude 393170 Longitude 1172080	Bechtel National Inc. 50 Beale Street San Francisco, CA 94105-1895	Chem Storage	N/A	Multi	5 million
Modern Disposal	Pletcher Road and Harold Road	4746 Model City Road, Model City, NY 14107	Garbage	N/A	Multi	10 million
Lewiston Town Finished Water Storage	PASNY Tank Upper Mountain Road	County of Niagara	Water storage	N/A	Multi	3 million
Lewiston Waste Water Pollution Control Center	501 Pletcher Road	Town of Lewiston	Waste / Waterplant	N/A	Multi	5 million
Mount St. Mary's Hospital and Health Center	5300 Military Road	Niagara Seton Corp.	Hospital	N/A	Multi	100 million

Name	Address	Owner	Usage	Square Feet	Occu-pancy	Estimated Monetary Value
	Latitude 380070 Longitude 1149550					
Lewiston Fire Company #1, Inc.	145 North Sixth Street	Lewiston #1 Fire Company	Fire Dept	N/A	N/A	2 million
Upper Mountain Fire Company	839 Moyer Road Latitude 384880 Longitude 1150180	Upper Mountain Fire Company	Fire Dept	N/A	N/A	2 million
Lewiston Town Police Department	145 North Fourth Street Latitude 376870 Longitude 156840	Town of Lewiston	Police Dept	N/A	N/A	1 million
Lewiston Fire Company #2	1705 Saunders Settlement Road	Lewiston #2 Fire Company	Fire Dept	N/A	N/A	2 million
Sanborn Fire Company	5811 Buffalo Street	Sanborn Fire Company	Fire Dept	N/A	N/A	2 million
Lewiston Town Hall	1375 Ridge Road Latitude 382940 Longitude 1158860	Town of Lewiston	Govt bldg	N/A	N/A	1 million
Lewiston Village Hall	145 N. Fourth Street Latitude 376570 Longitude 11586840	Town of Lewiston	Govt bldg	N/A	N/A	2 million
Lewiston Porter Central School	4061 Creek Road	Not available	School	N/A	N/A	10 million

Name	Address	Owner	Usage	Square Feet	Occu-pancy	Estimated Monetary Value
Niagara Wheatfield High School	2292 Saunders Settlement Road	Not available	School	N/A	N/A	10 million
Stella Niagara	4421 Lower River Road	Not available	School	N/A	N/A	5 million
West Street Elementary School	5700 West Street	Not available	School	N/A	N/A	5 million
Colonial Village Elementary School	1456 Saunders Settlement Road	Not available	School	N/A	N/A	5 million
Niagara University	5795 Lewiston Road	Not available	School	N/A	N/A	150 million
Lewiston Town Highway Department	1445 Swan Road Latitude 394430 Longitude 1168090	Town of Lewiston	Equipment storage	N/A	N/A	1 million
Lewiston Village Highway Department	892 Seneca Street	Village of Lewiston	Equipment storage	N/A	N/A	1 million

11.4.4 Town of Lewiston Natural Hazard Vulnerability

11.4.4.1 Earthquake

Summary of the Hazard

An earthquake is generated by rupture or sudden displacement along a geologic fault when it has been strained beyond its elastic strength. During this strain, the opposing sides of the fault are stressed until failure and displacement occur and the sides rebound back to an unstrained position. However, slow displacement without accompanying earthquakes has been observed along some faults. Ground shaking from earthquakes can collapse buildings and bridges; disrupt gas, electric, and phone service; and sometimes trigger landslides, avalanches, flash floods, and fires. Ground shaking is the result of seismic waves reaching the earth's surface.

Estimate of Potential Losses – Qualitative Analysis

In the course of updating this Plan, the Team completed a qualitative risk assessment exercise. This exercise asked the representatives from each participating jurisdiction to rank the hazards in the Plan according to their potential to impact to their particular jurisdiction. Those impacts for this hazard were ranked as noted in Table 11.4.4.1-1 below:

Table 11.4.4.1-1
Qualitative Analysis of Earthquake

FREQUENCY:	Likely
SEVERITY:	Critical
RISK CLASS:	B
SEASONAL PATTERN:	None
PROBABLE DURATION:	Long-term
SPEED OF ONSET:	Unknown- rapid
RISKS:	Economic, loss of life

Estimate of Potential Losses – Quantitative Analysis

There are no geographic boundaries associated with this hazard. Therefore, all of Niagara County is considered to be a potential location for an occurrence.

All structures within the county and participating jurisdictions are at risk from the effects of an earthquake. According to the 2012 Census estimate, there are 1,372 housing units in the Town. The median value of these structures is $140,900, according to the Census. This equates to residential assets of approximately $193 million. A ten percent property loss would result in losses of $19 million.

In addition, all identified critical assets within the planning area have the potential to be damaged or destroyed by an earthquake. These assets have a combined estimated value of at least $2.42 billion and a ten percent loss across the planning area would represent a $242 million impact to local governments.

Finally, the 16,262 residents of the Town of Lewiston are all at risk from an earthquake. If one percent of the population suffered injury or death as a result of this hazard, approximately 163 people would be impacted.

Identified Data Limitations

Data that could be collected prior to the next update in order to develop a quantitative risk assessment includes:

- Data regarding building construction (materials, wind ratings, etc.);
- Building valuations for all assets within the Town of Lewiston; and

- Data regarding historic and potential earthquakes

Identified Risks and Vulnerabilities

The Town of Lewiston recognizes that an earthquake can have an impact on businesses and the economy, as well as result in property damage, injury, and even death.

The following potential impacts were identified by the municipality:

- Blocked Roads
- Bridge Failure
- Building Collapse
- Business Interruption
- Delayed Emergency Response
- Downed Power Lines
- Downed Trees
- Evacuation (Full)
- Evacuation (Localized)
- Explosion
- Flooding (Street)
- Flooding (Structure)
- Increased Fire Potential
- Potable Water Shortage/Depletion
- Loss of Use of Medical Facility
- Loss of Power
- Mass Casualties
- Property Damage
- School Closure
- Sewer Backup
- Economic Loss

11.4.4.2 Flood

Summary of the Hazard

Flooding is a natural occurrence in rivers, streams, and drainage ways. Floodplains are lowlands directly adjacent to a water body that is subject to flooding, when excess water from rain, snowmelt, or storm surge overflows its banks. Several causes of riverine and stormwater flooding in Niagara County may include overflow from a river channel, flash floods, alluvial fan floods, mudflows and debris flows, flooding due to dam failure, local drainage or high groundwater levels, fluctuating lake levels and ice-jam floods.

Coastal flooding that may also occur on the southern shores of Lake Ontario and along the Niagara River includes storm surge, tides, and wave action.

Estimate of Potential Losses – Qualitative Analysis

In the course of updating this Plan, the Team completed a qualitative risk assessment exercise. This exercise asked the representatives from each participating jurisdiction to rank the hazards in the Plan according to their potential to impact to their particular jurisdiction. Those impacts for this hazard were ranked as noted in Table 11.4.4.2-1 below:

Table 11.4.4.2-1
Qualitative Analysis of Flood

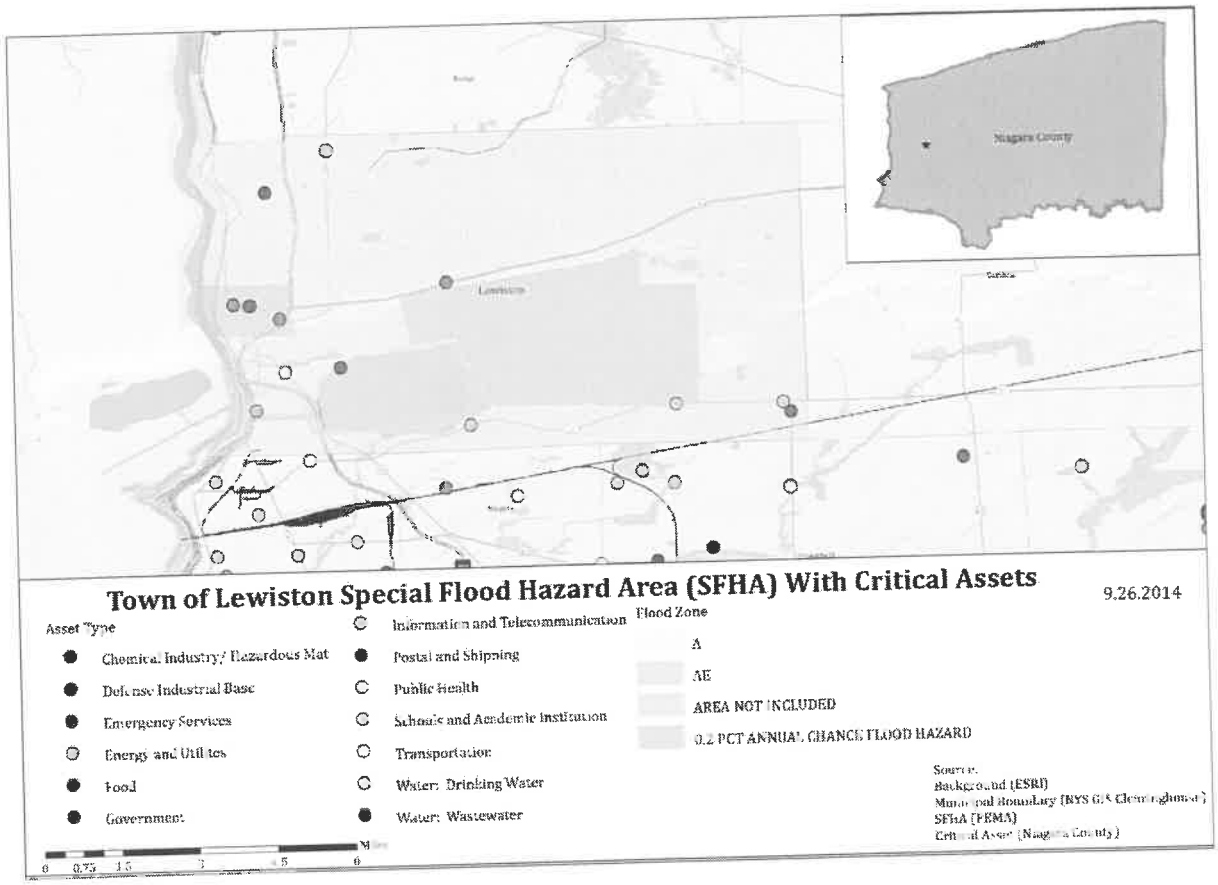
FREQUENCY:	Likely
SEVERITY:	Critical
RISK CLASS:	B
SEASONAL PATTERN:	Weather-dependent
PROBABLE DURATION:	Potential for long-term
SPEED OF ONSET:	Rapid
RISKS:	Property damage

Estimate of Potential Losses – Quantitative Analysis

Map 11.4.4.2-1 depicts the flood zones and the relative location of identified critical assets in the Town of Lewiston.

Chapter 11. Town of Lewiston

Map 11.4.4.2-1
Special Flood Hazard Areas and Critical Assets



Based on available data from ESRI, FEMA, and locally provided information, there are no critical assets within the SFHA (1% or 0.2% zones) in the Town of Lewiston.

Though the identified critical facilities identified are outside the SFHA, they may still be at risk to flooding due to changing weather conditions and other factors that affect the community. The SFHA has geospatial boundaries but flooding does not necessarily stop on a map line or occur within a mapped boundary. Isolated incidents can occur outside the identified flood zones.

Residential structures, and the people that live in them, are also at significant risk from flooding in the Town of Lewiston. Local records show that there are 240 households within the SHFA. Using the census median home value of $140,900, this indicates an impact with a ten percent loss of homes in the SHFA would cost property owners and insurance companies at least $3.3 million.

Identified Data Limitations

Data that could be collected through local planning, assessor, and floodplain manager's offices prior to the next update in order to develop a more detailed quantitative risk assessment includes:

- Data regarding building construction (materials, location of utilities and connections);
- Building valuations for all assets within the county and municipal boundaries;
- Data regarding expected/projected changes in development;
- Data regarding projected population changes; and
- Data regarding the first floor elevation of all buildings within the county and municipalities, as well as the elevation of all critical assets and infrastructure.

Identified Risks and Vulnerabilities

The Town of Lewiston recognizes that flooding can cause economic impacts and property damage, which can also lead to insurance liabilities.

The following potential impacts were identified by the municipality:

- Blocked Roads
- Bridge Failure
- Building Collapse
- Business Interruption
- Delayed Emergency Response
- Downed Power Lines
- Downed Trees
- Evacuation (Full)
- Evacuation (Localized)
- Flooding (Street)
- Flooding (Structure)
- Flooding (Agriculture)
- Increased Fire Potential
- Potable Water Shortage/Depletion
- Loss of Power
- Property Damage
- School Closure
- Sewer Backup
- Livestock Loss
- Economic Loss

11.4.4.3 High Wind

Summary of the Hazard

Wind is defined as the motion of air relative to the earth's surface. Severe high winds often result from thunderstorm inflow and outflow, downburst winds when storm clouds collapse, strong frontal systems, or high or low-pressure systems moving across a region. High winds are defined as winds with speeds reaching 50 miles per hour (mph) or greater that are either continuous or gusting.

Estimate of Potential Losses – Qualitative Analysis

In the course of updating this Plan, the Team completed a qualitative risk assessment exercise. This exercise asked the representatives from each participating jurisdiction to rank the hazards in the Plan according to their potential to impact to their particular jurisdiction. Those impacts for this hazard were ranked as noted in Table 11.4.4.3-1 below:

Table 11.4.4.3-1
Qualitative Analysis of High Wind

FREQUENCY:	Likely
SEVERITY:	Critical
RISK CLASS:	B
SEASONAL PATTERN:	Weather dependent
PROBABLE DURATION:	Storm-dependent
SPEED OF ONSET:	Rapid
RISKS:	Tree damage, property damage

Estimate of Potential Losses – Quantitative Analysis

High winds can and do affect the entire county, including the Town of Lewiston. Hazards associated with high wind can result in losses throughout the planning area.

All structures within the county and participating jurisdictions are at risk from the effects of high wind. According to the 2012 Census estimate, there are 1,372 housing units in the Town. The median value of these structures is $140,900, according to the Census. This equates to residential assets of approximately $193 million. If ten percent of these residential assets received ten percent damage by high wind, this would result in losses of $1.9 million.

In addition, all identified critical assets within the planning area have the potential to be damaged or destroyed by high wind. These assets have a combined estimated value of at least $2.42 billion and a ten percent loss to ten percent of the assets across the planning area would represent a $24.2 million impact to the local government.

Identified Data Limitations

Data that could be collected prior to the next update in order to develop a quantitative risk assessment includes:

- Data regarding building construction (materials, wind ratings, etc.);
- Building valuations for all assets within the Town of Lewiston; and
- Data regarding historic and potential high wind events

Identified Risks and Vulnerabilities

The Town of Lewiston recognizes that high wind can lead to property damage and loss of power, which can have business and economic impacts, as well as insurance liabilities.

The following potential impacts were identified by the municipality:

- Blocked Roads
- Business Interruption
- Delayed Emergency Response
- Downed Power Lines
- Downed Trees
- Evacuation (Full)
- Evacuation (Localized)
- Increased Fire Potential
- Loss of Power
- Property Damage
- Economic Loss

11.4.4.4 Ice Storm

Summary of the Hazard

An ice storm is a severe winter storm, which results in damaging accumulations of ice. Significant accumulations of ice, usually .25 inch or greater, will pull down trees and utility lines resulting in loss of power and communication. Accumulations of ice also make walking and driving extremely dangerous.

The onset of an ice storm can be one to two hours with the duration of one to two days. Recovery from this hazard could take several days to one week depending on the duration and severity of the storm. Ice storms do not occur frequently; however, when an ice storm occurs, there is a high potential to cause significant damage to property and death.

Estimate of Potential Losses – Qualitative Analysis

In the course of updating this Plan, the Team completed a qualitative risk assessment exercise. This exercise asked the representatives from each participating jurisdiction to rank the hazards in the Plan according to their potential to impact to their particular jurisdiction. Those impacts for this hazard were ranked as noted in Table 11.4.4.4-1 below:

Table 11.4.4.4-1
Qualitative Analysis of Ice Storm

FREQUENCY:	Likely
SEVERITY:	Critical
RISK CLASS:	B
SEASONAL PATTERN:	Winter
PROBABLE DURATION:	Multiple days
SPEED OF ONSET:	Rapid
RISKS:	Power loss, property damage, trees down

Estimate of Potential Losses – Quantitative Analysis

Ice storms can affect the entire county, including the Town of Lewiston. Hazards associated with ice storms can result in losses throughout the planning area.

All structures within the county and participating jurisdictions are at risk from the effects of ice storms. According to the 2012 Census estimate, there are 1,372 housing units in the Town. The median value of these structures is $140,900, according to the Census. This equates to residential assets of approximately $193 million. If ten percent of these residential assets received ten percent damage by an ice storm, this would result in losses of $1.9 million.

In addition, all identified critical assets within the planning area have the potential to be damaged by ice storms. These assets have a combined estimated value of at least $2.42 billion and a ten percent loss to ten percent of the assets across the planning area would represent a $24.2 million impact to the local government.

Identified Data Limitations

Data that could be collected prior to the next update in order to develop a quantitative risk assessment includes:

- Data regarding building construction (materials, roof types, etc.);
- Building valuations for all assets within the Town of Lewiston;
- Valuations for critical infrastructures (bridges, dams, etc.); and
- Data regarding historic and potential ice storms

Identified Risks and Vulnerabilities

The Town of Lewiston recognizes that ice storms result in business and economic impacts, as well as can lead to structural damage resulting in insurance liabilities.

The following potential impacts were identified by the municipality:

- Blocked Roads
- Bridge Failure
- Building Collapse
- Business Interruption
- Delayed Emergency Response
- Downed Power Lines
- Downed Trees
- Evacuation (Full)
- Evacuation (Localized)
- Explosion
- Flooding (Street)
- Flooding (Structure)
- Flooding (Agriculture)
- Loss of Power
- Property Damage
- School Closure
- Sewer Backup
- Wind Chill Factors
- Livestock Loss
- Economic Loss

11.4.4.5 Severe Storm

Summary of the Hazard

Severe storms include heavy precipitation, hail, lightening, thunderstorm, high wind, tornados, and possible hurricanes. A thunderstorm is a local storm, which is accompanied by lightning and thunder, gusty winds, heavy rain, and occasionally hail (tornado and high wind hazards are discussed individually elsewhere within this plan section). The National Weather Service classifies a thunderstorm as severe if it produces a tornado, winds greater than 57 miles per hour (mph) or hail three-quarter (¾) inch in diameter or larger.

Estimate of Potential Losses – Qualitative Analysis

In the course of updating this Plan, the Team completed a qualitative risk assessment exercise. This exercise asked the representatives from each participating jurisdiction to rank the hazards

in the Plan according to their potential to impact to their particular jurisdiction. Those impacts for this hazard were ranked as noted in Table 11.4.4.5-1 below:

Table 11.4.4.5-1
Qualitative Analysis of Severe Storm

FREQUENCY:	Highly likely
SEVERITY:	Critical
RISK CLASS:	A
SEASONAL PATTERN:	Weather-dependent
PROBABLE DURATION:	Days
SPEED OF ONSET:	Rapid
RISKS:	Flooding, power loss, downed trees/branches

Estimate of Potential Losses – Quantitative Analysis

Severe storms are a non-spatial hazard that can and do affect the entire county, including the Town of Lewiston. Hazards associated with severe storm can result in losses throughout the planning area.

All structures within the county and participating jurisdictions are at risk from the effects of severe storms including wind and lightning damage. According to the 2012 Census estimate, there are 1,372 housing units in the Town. The median value of these structures is $140,900, according to the Census. This equates to residential assets of approximately $193 million. If ten percent of these residential assets received ten percent damage by a severe storm, this would result in losses of $1.9 million.

In addition, all identified critical assets within the planning area have the potential to be damaged or destroyed by severe storms. These assets have a combined estimated value of at least $2.42 billion and a ten percent loss to ten percent of the assets across the planning area would represent a $24.2 million impact to the local government.

Identified Data Limitations

Data that could be collected prior to the next update in order to develop a more detailed quantitative risk assessment includes:

- Data regarding building construction (materials, roof types, wind ratings, etc.); and
- Building valuations for all assets within the Town of Lewiston

Identified Risks and Vulnerabilities

The Town of Lewiston recognizes that sewer system overloads and flooding cause high property damages. Downed trees and power lines can also cause economic losses in the

community.

The following potential impacts were identified by the municipality:

- Blocked Roads
- Business Interruption
- Delayed Emergency Response
- Downed Power Lines
- Downed Trees
- Evacuation (Localized)
- Flooding (Street)
- Flooding (Structure)
- Increased Fire Potential
- Loss of Power
- Property Damage
- Economic Loss

11.4.4.6 Severe Winter Storm

Summary of the Hazard

People, structures, and critical infrastructure are all vulnerable to the impacts associated with severe winter storms. Infrastructure can be damaged or destroyed by wind or ice, which can result in service interruptions and outages. Structures can be damaged or destroyed by wind, ice, or snow weight, and thus be useless to humans for protection from the elements. People can be injured or killed by transportation accidents (resulting from icy roadways) or extreme cold.

The majority of the vulnerability related to severe winter storms is related to either transportation accidents or to utility failures. Utility failure results in disruption to electrical service, water, and natural gas, which results in loss of heat to structures. Limited transportation access can limit residential fuel oil and gas delivery services and the ability of police, fire, and emergency medical services to render aid when needed.

Transportation-related accidents can occur when roadways and bridges become impacted and ice over, which results in loss of vehicular control and subsequent accidents. In addition, some portions of the population are more at risk to the effects of extreme cold. The very young and the elderly are generally more vulnerable to the effects of extreme cold, and are more likely to suffer illness or death as a result. This is especially true if exposure is extended for a period of time.

Estimate of Potential Losses – Qualitative Analysis

In the course of updating this Plan, the Team completed a qualitative risk assessment exercise. This exercise asked the representatives from each participating jurisdiction to rank the hazards

in the Plan according to their potential to impact to their particular jurisdiction. Those impacts for this hazard were ranked as noted in Table 11.4.4.6-1 below:

Table 11.4.4.6-1
Qualitative Analysis of Severe Winter Storm

FREQUENCY:	Highly likely
SEVERITY:	Critical
RISK CLASS:	A
SEASONAL PATTERN:	Winter
PROBABLE DURATION:	Days
SPEED OF ONSET:	Hours to days
RISKS:	Loss of power

Estimate of Potential Losses – Quantitative Analysis

Severe winter storms are a non-spatial hazard that can and do affect the entire county, including the Town of Lewiston. Each of the hazards associated with severe winter storms can result in losses throughout the planning area.

All structures within the county and participating jurisdictions are at risk from severe winter storms. According to the 2012 Census estimate, there are 1,372 housing units in the Town. The median value of these structures is $140,900, according to the Census. This equates to residential assets of approximately $193 million. If ten percent of these residential assets received ten percent damage by a severe winter storm, this would result in losses of $1.9 million.

In addition, all identified critical assets within the planning area have the potential to be damaged or destroyed by a severe winter storm. These assets have a combined estimated value of at least $2.42 billion and a ten percent loss to ten percent of the assets across the planning area would represent a $24.2 million impact to local governments.

Identified Data Limitations

Data that could be collected prior to the next update in order to develop a more detailed quantitative risk assessment includes:

- Data regarding building construction (materials, roof types, wind ratings, etc.);
- Building valuations for all assets within the planning area;
- Data regarding projected population changes; and
- Data regarding the location of vulnerable populations that may require services or special attention during severe winter storm events.

Identified Risks and Vulnerabilities

The Town of Lewiston recognizes that downed power lines and trees, potable water shortage/depletion due to breakdowns and frozen pipes, school and business closures due to bad road conditions, and general economic losses can stem from severe winter weather events. The Town has experienced severe winter storms annually. In rarer incidences, these storms have included blizzards and ice storms. As these storms are expected several times a year, this hazard will continue to impact the Town.

The following potential impacts were identified by the municipality:

- Blocked Roads
- Building Collapse
- Business Interruption
- Delayed Emergency Response
- Downed Power Lines
- Downed Trees
- Evacuation (Localized)
- Flooding (Street)
- Flooding (Structure)
- Increased Fire Potential
- Loss of Power
- Property Damage
- Economic Loss

11.4.4.7 Thunderstorm

Summary of the Hazard

Thunderstorms develop when a humid air mass near the surface rises on currents of air called updrafts. As the air mass rises through the atmosphere it expands and cools. Eventually, the rising air cools to the point where its water vapor condenses to form droplets of liquid water, releasing heat in the process into the surrounding air.

A product of the vigorous up and down drafts in the storm cloud is lightning, Thunderstorm clouds build up a large concentration of positive electrical charges near the top of the cloud and negative electrical charges near the middle. These opposite charges result in huge voltage differences within the cloud and between the cloud base and the ground. Depending upon the location of the opposite charges, lightning can occur as cloud-to-ground lightning, cloud-to-cloud lightning, or cloud-to-air lightning.

The temperature of a lightning bolt exceeds 40,000°F (22,000°C). The surrounding air is superheated, causing it to expand and then contract rapidly. This expansion and contraction

produces the sound vibrations heard as thunder.[3]

Estimate of Potential Losses – Qualitative Analysis

In the course of updating this Plan, the Team completed a qualitative risk assessment exercise. This exercise asked the representatives from each participating jurisdiction to rank the hazards in the Plan according to their potential to impact to their particular jurisdiction. Those impacts for this hazard were ranked as noted in Table 11.4.4.7-1 below:

Table 11.4.4.7-1
Qualitative Analysis of Thunderstorm

FREQUENCY:	Highly likely
SEVERITY:	Limited
RISK CLASS:	B
SEASONAL PATTERN:	Spring, summer, fall
PROBABLE DURATION:	Hours to days
SPEED OF ONSET:	Rapid
RISKS:	Power loss, property damage, flooding

Estimate of Potential Losses – Quantitative Analysis

Almost all thunderstorms are dangerous. Every thunderstorm produces lightning. There are no predictive techniques to facilitate protection from lightning strikes so all people, animals, crops, and property that are exposed to strikes during an event are potentially at risk. The 16,262 residents of the Town of Lewiston are all at risk from the thunderstorm hazard. If one percent of the population suffered injury or death as a result of this hazard, approximately 163 people would be impacted. Injury and death could be a direct or indirect result from a thunderstorm event.

Identified Data Limitations

Data that could be collected prior to the next update in order to develop a more detailed quantitative risk assessment includes:

- Data regarding building construction (materials, roof types, wind ratings, etc.);
- Building valuations for all assets within the planning area;
- Data regarding projected population changes; and
- Data regarding historic and potential thunderstorm events

Identified Risks and Vulnerabilities

The Town of Lewiston recognizes that thunderstorms may result in power outages, downed

[3] "Thunderstorm." UXL Encyclopedia of Science. 2002. *Encyclopedia.com.* 23 May. 2014 <http://www.encyclopedia.com>.

trees, and damaged property.

The following potential impacts were identified by the municipality:

- Blocked Roads
- Delayed Emergency Response
- Downed Power Lines
- Downed Trees
- Flooding (Street)
- Flooding (Structure)
- Increased Fire Potential
- Loss of Power
- Property Damage

11.4.5 Town of Lewiston Human-Caused Hazard Vulnerability

11.4.5.1 HazMat – Fixed Site

Summary of the Hazard

A hazardous material release can occur during production, storage, transportation, use, or disposal. Hazardous materials - fixed site, deals with the uncontrolled release of material from a stationary facility, which when released can result in death or injury to people and/or damage to property and the environment. For this section, hazardous material events that occur during production, storage, or disposal are considered. This hazard includes fuel and gas pipelines. Hazardous materials, such as explosives, flammable and combustible substances, poisons, and radioactive materials, are being produced, stored, and disposed of daily throughout Niagara County. A release of a hazardous material while at a fixed location can cause death, serious injury, and damage to nearby buildings, land, waterways and air.

Estimate of Potential Losses – Qualitative Analysis

In the course of updating this Plan, the Team completed a qualitative risk assessment exercise. This exercise asked the representatives from each participating jurisdiction to rank the hazards in the Plan according to their potential to impact to their particular jurisdiction. Those impacts for this hazard were ranked as noted in Table 11.4.5.1-1 below:

Table 11.4.5.1-1
Qualitative Analysis of HazMat – Fixed Site

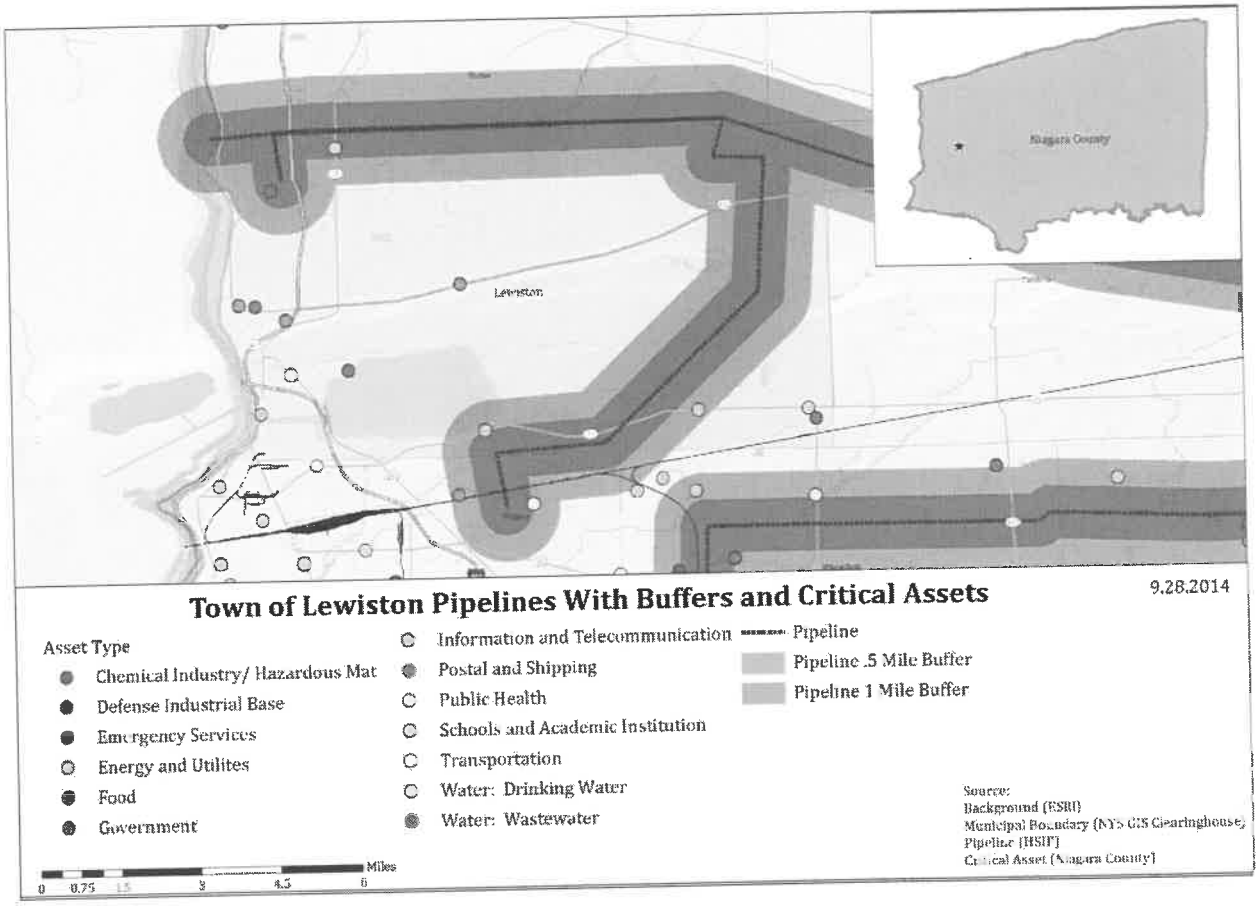
FREQUENCY:	Possible
SEVERITY:	Critical
RISK CLASS:	B
SEASONAL PATTERN:	None

PROBABLE DURATION:	Days to weeks
SPEED OF ONSET:	Rapid
RISKS:	Multiple

Estimate of Potential Losses – Quantitative Analysis

Map 11.4.5.1-1 depicts the pipelines, including buffers, within the Town of Lewiston and the relative location of identified critical assets.

Map 11.4.5.1-1
Pipelines with Buffers and Critical Assets



Based on available data from ESRI, FEMA, and locally provided information, there are four critical assets within the buffer zones (.5 mile or 1 mile) totaling in value to approximately $5 million in the Town of Lewiston.

The buffer zones have geospatial boundaries but a hazardous materials release does not necessarily stop on a map line or occur within a mapped boundary. Isolated incidents can occur outside the identified pipeline locations and buffer zones in the Town of Lewiston.

Residential structures, and the people that live in them, are also at significant risk from hazardous materials release in the Town of Lewiston. Local records show that there are 1,294 households within the pipeline buffer zones. Using the census median home value of $140,900, this indicates an impact with a ten percent loss of homes in the pipeline buffer zones would cost property owners and insurance companies at least $1.8 million in the Town.

Identified Data Limitations

Data that could be collected prior to the next update in order to develop a more detailed quantitative risk assessment includes:

- Data regarding historic and potential hazardous materials release events;
- Locations of vulnerable populations in relation to potential hazardous materials release; and
- Studies to determine the actual risks and vulnerabilities to hazardous materials release.

Identified Risks and Vulnerabilities

The Town of Lewiston recognizes that in cases of hazardous materials release from a fixed site, localized evacuations might be required. It can lead to business interruptions not only for the site itself, but for other businesses in the vicinity. If an accident occurs at one of these locations, there is a potential for mass casualties and property damage.

The following potential impacts were identified by the municipality:

- Business Interruption
- Evacuation (Localized)
- Explosion
- Hazardous Materials Release
- Increased Fire Potential
- Mass Casualties
- Property Damage
- School Closure
- Economic Loss

11.4.5.2 HazMat - Transportation

Summary of the Hazard

A hazardous material release can occur during production, storage, transportation, use, or disposal. For this section only hazardous material hazards that occur during transportation are considered.

Hazardous materials, such as explosives, flammable and combustible substances, poisons, and radioactive materials, are shipped daily on the highways, railroads, waterways, and airways. A release of a hazardous material while being transported can cause death, serious injury, and damage

to nearby buildings, land, waterways, and air.

Estimate of Potential Losses – Qualitative Analysis

In the course of updating this Plan, the Team completed a qualitative risk assessment exercise. This exercise asked the representatives from each participating jurisdiction to rank the hazards in the Plan according to their potential to impact to their particular jurisdiction. Those impacts for this hazard were ranked as noted in Table 11.4.5.2-1 below:

Table 11.4.5.2-1
Qualitative Analysis of HazMat - Transportation

FREQUENCY:	Likely
SEVERITY:	Critical
RISK CLASS:	B
SEASONAL PATTERN:	None
PROBABLE DURATION:	Hours to days
SPEED OF ONSET:	Rapid
RISKS:	Economic loss, property damage

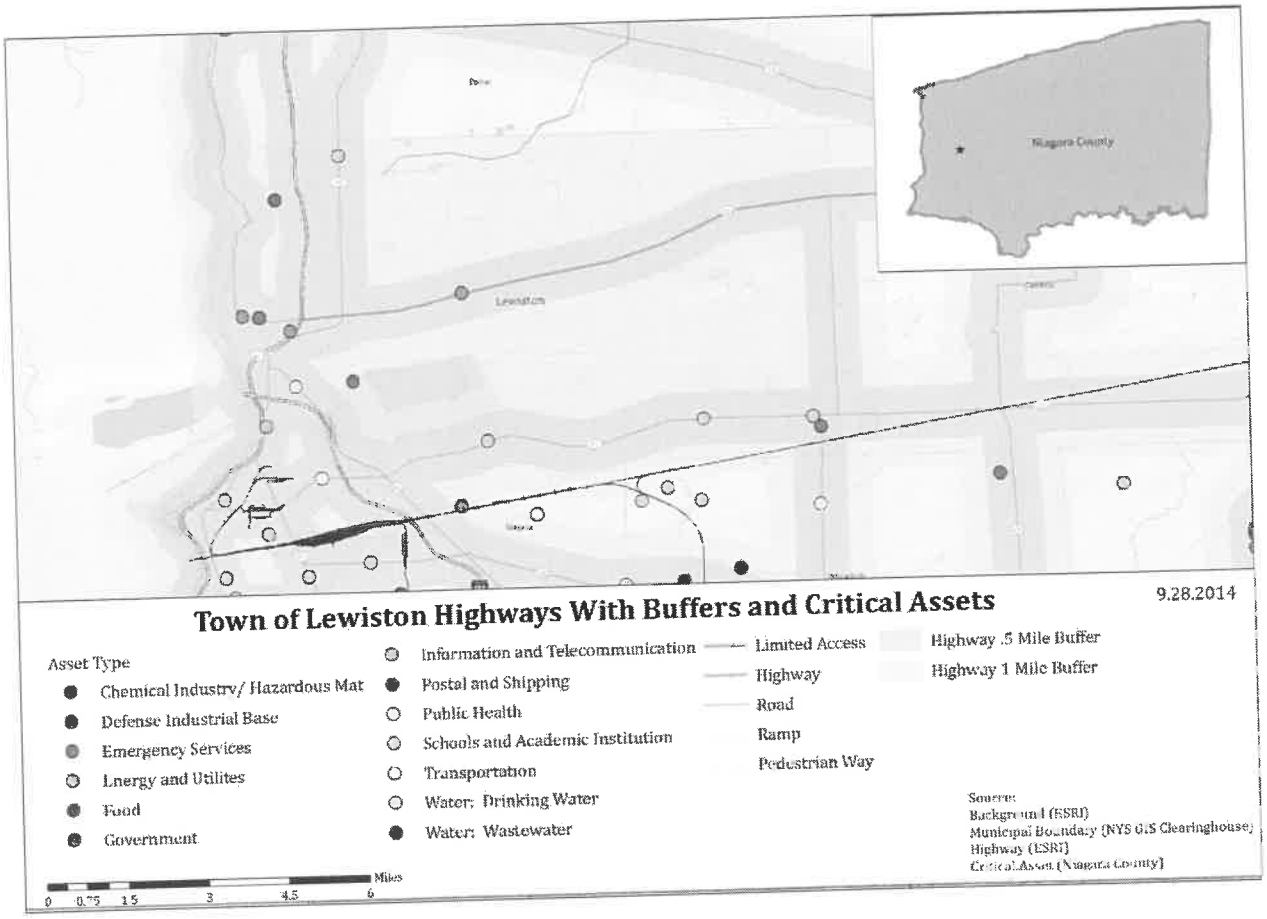
Estimate of Potential Losses – Quantitative Analysis

Map 11.4.5.2-1 depicts the highways that run through the Town of Lewiston and the relative location of identified critical assets.

Map 11.4.5.2-2 depicts the railroads that run through the Town and the relative location of identified critical assets.

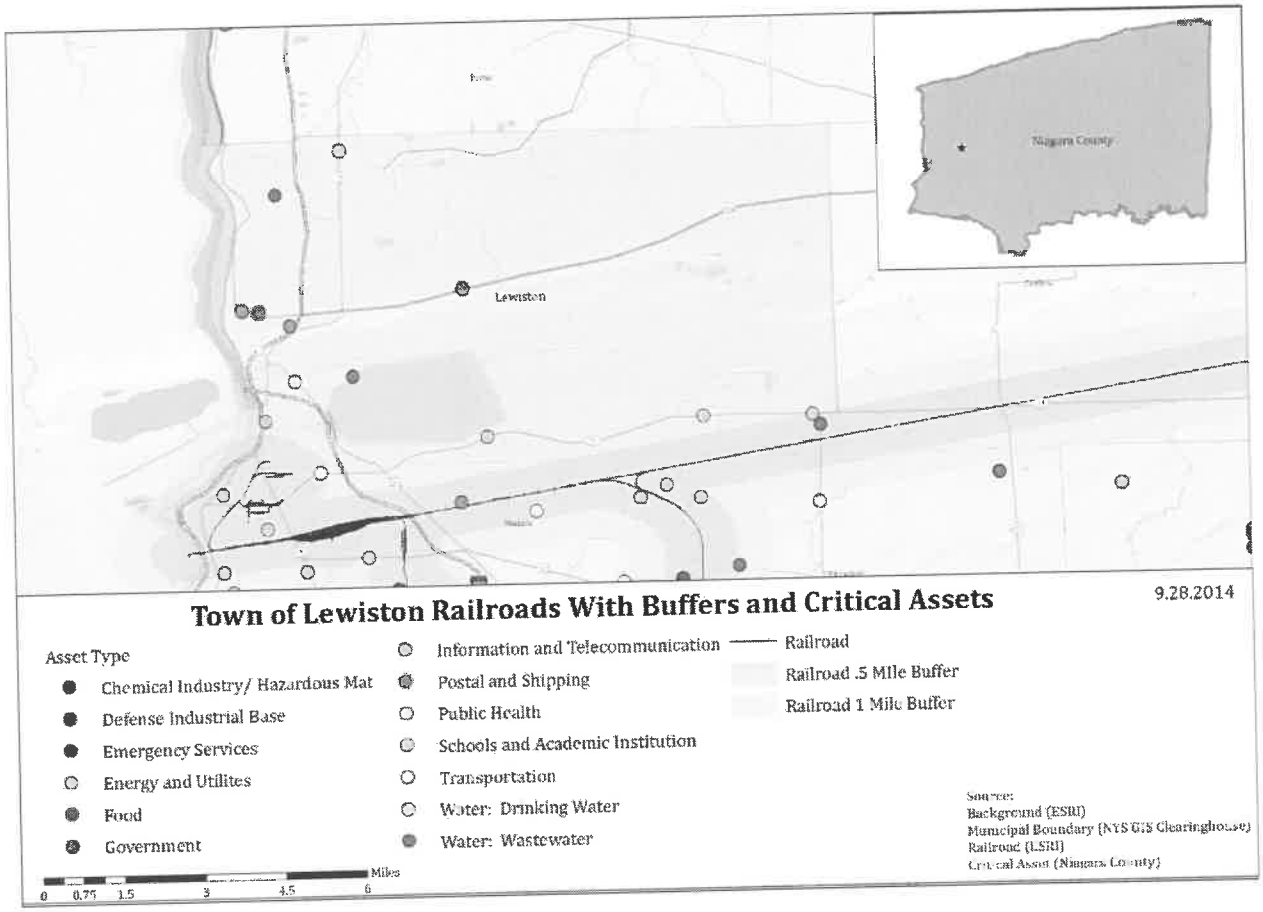
Chapter 11. Town of Lewiston

Map 11.4.5.2-1
Highways with Buffers and Critical Assets



Chapter 11. Town of Lewiston

Map 11.4.5.2-1
Railroads with Buffers and Critical Assets



Based on available data from ESRI, FEMA, and locally provided information, there are 16 critical assets, including government buildings, totaling in value of at least $1.1 billion within both highway and railroad buffer zones (.5 mile or 1 mile) in the Town of Lewiston.

The buffer zones have geospatial boundaries but a hazardous materials release does not necessarily stop on a map line or occur within a mapped boundary. Critical assets outside the identified highway and railroad buffer zones have the potential to be affected in the Town of Lewiston.

Residential structures, and the people that live in them, are also at significant risk from hazardous materials release while in transport in the Town of Lewiston. Local records show that there are 6,301 households and 689 within the highway and railroad buffer zones, respectively. Using the census median home value of $140,900, this indicates an impact with a ten percent loss of homes in the highway buffer zones would cost property owners and insurance companies at least $88 million. An impact with a ten percent loss of homes in the railroad buffer zones would cost property owners and insurance companies at least $9.7 million.

Identified Data Limitations

Data that could be collected prior to the next update in order to develop a more detailed quantitative risk assessment includes:

- Data regarding historic and potential hazardous materials release while in transport;
- Locations of vulnerable populations in relation to roadways used by vehicles carrying hazardous materials; and
- Studies to determine the actual risks and vulnerabilities to hazardous materials release.

Identified Risks and Vulnerabilities

The Town of Lewiston recognizes that in case of a hazardous materials release during transport, there may be a need for localized evacuations near the incident. The Town of Lewiston has multiple HazMat routes through its town, increasing the chances that a hazardous materials release during transport may occur.

The following potential impacts were identified by the municipality:

- Business Interruption
- Evacuation (Localized)
- Explosion
- Hazardous Materials Release
- Increased Fire Potential
- Mass Casualties
- Property Damage
- School Closure
- Economic Loss

11.5 Capability Assessment

11.5.1 Interim Final Rule for Assessing Capability

Requirement §201.6(c)(2)(ii)(C): *[The plan **should** describe vulnerability in terms of] providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.*

Requirement §201.6(c)(3)(ii): *A section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure. All plans approved by FEMA after October 1, 2008 **must** also address the jurisdiction's participation in the NFIP, and continued compliance with NFIP requirements, as appropriate.*

11.5.2 Overview and Purpose of Capability Assessment

The purpose of conducting a capability assessment is to determine the ability of Niagara County and its municipalities to implement a mitigation strategy.[4] As with any planning process, it is important to determine what actions are feasible based on an understanding of those departments tasked with their implementation. More specifically, the capability assessment helps to determine what mitigation actions are practical and likely to be implemented over time given the fiscal, technical, administrative and political framework of the community. It also provides an opportunity to assess existing plans, policies and processes in place. A careful analysis was conducted to detect any existing gaps, shortfalls or weaknesses within existing government activities that could exacerbate community vulnerability. The assessment also highlights positive measures already in place, which should continue to be supported and through future mitigation efforts.

11.5.3 Methodology

The Disaster Mitigation Act of 2000 requires that local governments review and incorporate, if appropriate, existing plans, studies, reports and technical information into their hazard mitigation plans. Witt O'Brien's worked closely with the MPG to distribute a detailed *Local Capability Assessment Survey* to participating jurisdictions. A copy of the surveys can be found in Appendices E though I. The survey asked several detailed questions about existing local plans, policies, programs, and ordinances that contribute to and/or hinder that community's ability to implement hazard mitigation actions. In addition, the *Local Capability Assessment Survey* addressed each jurisdiction's administrative, technical, financial, education and outreach, and political capabilities, and included a jurisdictional self-assessment. The survey results provided an inventory of existing local plans, policies, programs and ordinances.

An inventory and analysis of previously implemented mitigation actions is also included as part of the capability assessment. This information provides a county-wide perspective of the efforts taken to reduce the effect of natural, technological and human-caused hazards on the planning area and provides insight into the effectiveness of those efforts. Documenting past mitigation measures can also serve to help assess the degree to which local governments are willing to adopt future mitigation actions.

11.5.4 Federal and State Regulations, Plans, and Funding Sources

Summary of Regulations, Plans and Funding Sources

This section, including Table 11.5.4-1, provides summary information regarding selected federal

[4] While the Interim Final Rule for implementing the Disaster Mitigation Act of 2000 does not require a local capability assessment to be completed for local hazard mitigation plans, we believe that it is it a critical step to develop a mitigation strategy that meets the needs of each jurisdiction while taking into account their own unique abilities. However, the Rule does state that a community's mitigation strategy should be "based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools" (44 CFR, Part 201.6(c)(3)).

and state regulations, plans, and sources of funding that are relevant to mitigation projects.

Table 11.5.4-1
Summary of Selected State and Federal Regulations, Programs, and Funding Sources Relevant to Natural Hazard Mitigation

Title	Program Type	Administered By	Eligible Recipient	
			County	Municipalities
FEMA Public Assistance (PA)	Funding (Federal)	DHSES, FEMA	X	X
FEMA Hazard Mitigation Grant Program (HMGP)	Funding (Federal)	DHSES, FEMA	X	X
FEMA Pre-Disaster Mitigation (PDM)	Funding (Federal)	DHSES, FEMA	X	X
FEMA/National Flood Insurance Program (NFIP) Repetitive Flood Claims (RFC)	Funding (Federal)	DHSES, FEMA	X	X
FEMA/NFIP Severe Repetitive Loss (SRL)	Funding (Federal)	DHSES, FEMA	X	X
FEMA/NFIP Flood Mitigation Assistance (FMA)	Funding (Federal)	DHSES, FEMA	X	X
Housing and Urban Development Community Development Block Grants (CDBG)	Funding (Federal)	DHSES, FEMA	X	X

For many federal grants, the non-federal share can be borne by the state as *grantee*, the recipient community as *sub-grantee* or in some cases, the property owner who benefits from the project. In the case of property acquisitions intended to remove properties that experience repetitive flood losses, the non-federal share is typically covered by the property owner, who accepts the federal share of 75 percent and documents the lost equity as the non-federal share. This can serve as a disincentive to participation.

Implications of DHSES Capabilities on Local Hazard Mitigation Efforts

State capabilities for hazard mitigation have an impact on the efficacy of local planning and implementation. DHSES provides plan development assistance to local jurisdictions upon

request. Providing planning assistance is a daily affair as much of it is done via telephone calls and emails. DHSES offers planning and project support, and coordinates and administers statewide floodplain management. They assist local governments with the identification and promotion of structural and non-structural mitigation practices. They provide technical assistance with the identification of viable projects that will alleviate future damages, provide oversight of the development of a project application ensuring compliance with program policy and professional design standards, and conduct site visits during construction to ensure all approved project plans are being followed through a final project inspection.

11.5.5 Capability Assessment for the Planning Area

The County and each municipality was asked to self-assess their capabilities, which are described in this section. Conclusions are presented, including a discussion of the approach used to develop meaningful mitigation strategies based on the capability and risk assessment findings.

Planning and Regulatory Capabilities

Hazard mitigation is widely recognized as one of the four primary pillars of emergency management. Other pillars include preparedness, response and recovery. In reality, each pillar is interconnected with hazard mitigation as Figure 11.5.5-1 suggests.

Figure 11.5.5-1
Hazard Mitigation and the Phases of Emergency Management

Planning for each phase is a critical part of a comprehensive emergency management program and a key to the successful implementation of hazard mitigation actions. As a result, the *Local Capability Assessment Survey* asks several questions across a range of emergency management

plans in order to assess the jurisdiction's administrative, technical, and financial capabilities. The types of plans and regulatory capabilities are described below.

Comprehensive Plan: A comprehensive plan establishes the overall vision for a community and helps to guide municipal decision-making. Comprehensive planning is a continuous process to guide the development, redevelopment and investment of resources into a neighborhood, community, or county to promote an enhanced quality of life, infrastructure, and land use. Planning also helps economic development by facilitating a coordinated approach to needed investments and policies.

Open Space Management Plan: An open space management plan establishes the process, standards, guidelines, and conditions for long-term open space conservation and management of the sensitive species and habitats within the planning area. It provides concepts and procedures to maintain and natural and archeological resources, opportunities for outdoor education, places for recreation. The open space management plan also defines the edges of the urban environment.

Natural Resources Protection Plan: Natural resources protection plans may be tied to local ordinances and larger comprehensive plans. They are generally designed to protect mature and young woodlands, steep slopes, natural water bodies (ponds and lakes), streams, rivers, shoreline buffers, and may elaborate on floodplain protection in concert with a floodplain management plan.

Capital Improvements Plan: A capital improvements plan guides the scheduling of spending on public improvements. A capital improvements plan can serve as an important mechanism to guide future development away from identified hazard areas. Limiting public spending in hazardous areas is one of the most effective long-term mitigation actions available to local governments.

Economic Development Plan: The purpose of the economic development plan is to allow public support of economic projects to foster, promote and enhance local economic development efforts while continuing to protect against the unauthorized use of public money and other public resources. Furthermore, the plan may allow contingencies, protocol, or procedures for local governments to enter into one or more joint powers agreements with other local governments to plan and support regional economic development projects.

Historic Preservation Plan: A historic preservation plan is intended to preserve historic structures or districts within a community. An often overlooked aspect of the historic preservation plan is the assessment of buildings and sites located in areas subject to natural hazards to include the identification of the most effective way to reduce future damages. This may involve retrofitting or relocation techniques that account for the need to protect buildings that do not meet current building standards or are within a historic district that cannot easily be relocated out of harm's way.

Farmland Preservation Plan: A key response to farmland loss has been the use of agricultural conservation easements. Efforts have been advanced by the federal Farm and Ranch Lands Protection Program (FRPP), which provides matching funds to state and local Purchase of Agricultural Conservation Easement (PACE) programs, land trusts and tribal governments to buy

conservation easements on farm and ranch land. Farmland preservation plans help keep land use designated for agriculture, improve agricultural viability, encourage on-farm conservation, and help farmers gain access to land.[56]

Emergency Operations Plan: An emergency operations plan outlines the responsibilities of those responding to an emergency or disaster and the means by which resources are deployed. It focuses on the measures that are essential for protecting the public including warning, emergency public information, evacuation, and sheltering. The emergency operations plan established lines of authority and organizational relationships, shows how all actions will be coordinated, describes how people and property will be protected in emergencies and disasters, identifies personnel, equipment, facilities, supplies, and other resources available for use during response and recovery operations, and identifies steps to address mitigation concerns during response and recovery activities.

Disaster Recovery Plan: A disaster recovery plan serves to guide the physical, social, environmental and economic recovery of a community, including the physical reconstruction process following a disaster.

Evacuation Plan: Evacuation plans are designed procedures for quick and rapid movement of people away from a given threat (i.e. floods, tornados, fire). Evacuation plans may include voluntary and mandatory community evacuation considerations for large, community-wide hazards, or planning for smaller evacuation procedures to address localized incidents for an identified building or facility. Evacuation plans may include registration, transportation, sheltering, and/or feeding elements.

Floodplain Management Plan: Floodplain management is the operation of a community program of corrective and preventative measures for reducing flood damage. These measures take a variety of forms and generally include requirements for zoning, subdivision or building, and special-purpose floodplain ordinances. The general purpose of a floodplain management plan is to protect people and property from potential flood damages while maintaining good standing with FEMA's NFIP and CRS programs. Plans are also used to educate residents about the hazards of flooding, to suggest loss reduction measures, and to raise awareness of the beneficial functions of the floodplain.

Continuity of Operation Plan: A continuity of operations plan establishes a clear chain of command, line of succession, and plans for backup or alternate emergency facilities in case of an extreme emergency or disaster where normal operations or authorities are compromised. Continuity of operations plans help to maintain emergency and/or expedite normal government operations.

Transportation Plan: A transportation plan identifies the means to gauge transportation demands and the options to meet those needs, while considering the social, economic and

[5] Retrieved 10.30.13. http://www.farmland.org/programs/protection/default.asp
[6] American Farmland Trust, *Impacts of the Federal Farm and Ranch Lands Protection Programs: An Assessment Based on Interviews with Participating Landowners.* June 2013. Print

environmental characteristics of the area. The development of transportation networks can significantly impact the amount, type and location of future growth. As a result, transportation planning can have a dramatic impact on future hazard vulnerability.

Stormwater Management Plan: A stormwater management plan is designed to address flooding associated with storm water runoff. The stormwater management plan is typically focused on design and construction measures that are intended to reduce the impact of more frequently occurring minor urban flooding.

Community Wildfire Protection Plan: The community wildfire protection plans are developed in concert and under guidelines of the federal Healthy Forest Restoration Act of 2003. The purpose of the plan generally includes promoting firefighter and public safety, identifying community risk, reducing fuel hazards, fire prevention programs and activities, and improving fire department response capability.

Zoning Ordinances: Zoning represents the means by which land use is controlled by local governments. As part of a community's police power, zoning is used to protect the public health, safety and welfare. A zoning ordinance is the mechanism through which zoning is typically implemented. Since zoning regulations enable municipal governments to limit the type and density of development, it can serve as a powerful tool when applied in identified hazard areas.

Subdivision Ordinances: A subdivision ordinance is intended to regulate the development of housing, commercial, industrial or other uses, including associated public infrastructure, as land is subdivided into buildable lots for sale or future development. Subdivision design that accounts for natural hazards can dramatically reduce the exposure of future development.[7]

Fire and Building Codes, Permitting and Inspections: Building codes regulate construction standards. Decisions regarding the adoption of building codes, the type of permitting process required both before and after a disaster, and the enforcement of inspection protocols all affect the level of hazard risk faced by a community.

Floodplain ordinance/NFIP participation: Local floodplain regulations are tools used by counties and municipalities to regulate the type of construction that occurs in the floodplain. If a community is an NFIP participant, a Flood Ordinance or Court Order is in place.

Table 11.5.5-1 provides a jurisdictional overview of the plans and codes/ordinances in place, and how they can be used to integrate mitigation into daily operations.

[7] For additional information regarding the use of subdivision regulations in reducing flood hazard risk, see *Subdivision Design in Flood Hazard Areas*. 1997. Morris, Marya. Planning Advisory Service Report Number 473. American Planning Association: Washington, D.C.

Chapter 11. Town of Lewiston

Table 11.5.5-1
Capability Assessment Findings – Plans, Codes, and Ordinances

Plans	Yes/No Year	• Does the plan address identified hazards? • Does the Plan identify projects to include in the mitigation strategy? • Can the plan be used to implement mitigation actions?
Comprehensive/Master Plan	Yes	Can incorporate actions
Capital Improvements Plan	Yes	Can incorporate actions
Economic Development Plan	No	
Local Emergency Operations Plan	Yes	Can incorporate actions
Continuity of Operations / Continuity of Government Plan	No	N/A
Transportation Plan	No	N/A
Stormwater Management Plan	Yes	Incorporates Actions
Community Wildfire Protection Plan	No	N/A
Other special plans (e.g., brownfields redevelopment, disaster recovery, coastal zone management, climate change adaptation)	Yes	Can incorporate actions
Building Code, Permitting, Inspections	**Yes/No Year**	**Are codes adequately enforced?**
Building Code	Yes	Version/Year: 2010
Building Code Effectiveness Grading Schedule (BCEGS) score	Yes	Score: downgraded to MS not adoptions residential sprinkler system
Fire Department ISO rating		Rating(s): UMT - 6
Site plan review requirements	Yes	Yes
Land Use Planning and Ordinances	**Yes/No Year**	• Is the ordinance an effective measure for reducing hazard impacts? • Is the ordinance adequately administered and enforced?
Zoning Ordinance	Yes	Incorporates mitigation
Subdivision Ordinance	Yes	Incorporates mitigation
Floodplain Ordinance	Yes	Incorporates mitigation
Natural hazard specific ordinance (stormwater, steep slope, wildfire)	Yes	Riverfront district
Flood insurance rate maps	Yes	Incorporates mitigation

Acquisition of land for open space and public recreation uses	Yes	Town law
Other		
How can these capabilities be expanded and improved to reduce risk?		
Will continue as noted above.		

Administrative and Technical Capability

Administrative and technical capability can be defined as possessing the skills and tools needed to improve decision-making, including the development of sound mitigation actions. Technical capability can be measured across three primary elements: 1) geographic information systems (GIS) and database management; 2) grants management; 3) hazard mitigation planning, 4) and warning systems and services. Measuring the degree to which each element is found in the planning area was conducted using the *Local Capability Assessment Survey* and through discussions with county and municipal staff.

Table 11.5.5-2 provides a jurisdictional overview of the administrative and technical capabilities in place, and how they can be used to integrate mitigation into daily operations.

Table 11.5.5-2
Capability Assessment Findings – Administrative and Technical

Administration	Yes/No	• Describe capability • Is coordination effective?
Planning Commission	Yes	Yes
Mitigation Planning Committee	Yes	Town fireboard
Maintenance programs to reduce risk (e.g. tree trimming, drainage system cleaning/clearing)	No	N/A
Mutual aid agreements	Yes	Yes
Staff	**Yes/No FT/PT**	• Is staffing adequate to enforce regulations? • Is staff trained on hazards and mitigation? • Is coordination between agencies and staff effective?
Chief Building Official	Yes	F/T
Floodplain Administrator/Manager	Yes	Yes
Emergency Manager	No	Fire chief - Yes

Community Planner	No	N/A
Civil Engineer		Outsource work - Yes
GIS Analyst/Tech/Coordinator	Yes	Wendel engineer - Yes
Other:		
Other:		
Technical	**Yes/No**	• **Describe capability** • **Has capability been used to assess/mitigate risk in the past?**
Warning systems/services (Reverse 911, outdoor warning sirens, smartphone applications, social media feeds)	Yes	Fire sirens
Hazard data and information	Yes	e-Plan
Grant writing	Yes	Information not available, but will be provided for the next plan update.
HAZUS analysis	No	N/A
Other:		
Other:		
How can these capabilities be expanded and improved to reduce risk?		
The Town will review the plan against current administrative actions to determine how they can be incorporated or expanded.		

Financial Capability

The ability to take action is often closely associated with the amount of money available to implement policies and projects.[8] This may take the form of grants received or state and locally based revenue. The costs associated with policy and project implementation vary widely. In some cases, policies are tied primarily to staff costs associated with the creation and monitoring of a given program. In other cases, money is linked to an actual project, like the acquisition of flood-prone homes, which can require a substantial commitment from local, state and federal funding sources.

[8] Gaining access to federal, state or other sources of funding is often an overriding factor driving the development of hazard mitigation plans. However, an important objective of local governments seeking a more sustainable future is the concept of self-reliance. Over time, counties and municipalities should seek the means to become less dependent on federal assistance, developing a more diversified approach that assesses the availability of federal, state and locally generated funding to implement mitigation actions. Additional assistance may be available from the business and corporate sector as well as certain non-profit groups. This should be coupled with an attempt to identify mitigation measures that cost little or no money, yet may compliment the larger array of actions identified in the Plan.

Table 11.5.5-3 provides a jurisdictional overview of the administrative and technical capabilities in place, and how they can be used to integrate mitigation into daily operations.

Table 11.5.5-3
Capability Assessment Findings – Financial Capability

Funding Resource	Access/ Eligibility (Yes/No)	• Has the funding resource been used in the past and for what type of activities? • Could the resource be used to fund future mitigation actions?
Capital improvements project funding	Yes	Unknown
Authority to levy taxes for specific purposes	Yes	Special dist. taxes
Fees for water, sewer, gas, or electric services	Yes	No
Impact fees for new development	Yes	No
Stormwater utility fee	Yes	No
Incur debt through general obligation bonds and/or special tax bonds	Yes	No
Incur debt through private activities	No	N/A
Community Development Block Grant (CDBG)	No	N/A
Other federal funding programs	No	None presently
State funding programs	Yes	For highway dept. or general fund
Other:		
Other:		
How can these capabilities be expanded and improved to reduce risk?		
Capital funding may be an opportunity to address mitigation projects.		

Community Resiliency Capability

Community resiliency is often identified, defined, and improved through community education and outreach programs. Resiliency may include school programs, community special interest groups, ongoing public service announcements, public-private partnerships, and government led community safety certification programs. Community education and outreach programs are often some of the least expensive mitigation activities providing the greatest reach to the community.

Table 11.5.5-4 on the following page provides a jurisdictional overview of the administrative and technical capabilities in place, and how they can be used to integrate mitigation into daily operations.

Table 11.5.5-4
Capability Assessment Findings – Community Resiliency Capability

Program/Organization	Yes/No	• Describe program/organization and how it relates to disaster resilience and mitigation • Could the program/organization help implement future mitigation activities?
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	Yes	Town environment comm.
Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	Yes	F.D. do this
Natural disaster or safety related school programs	Yes	F.D.
StormReady certification	No	N/A
Firewise Communities certification	No	N/A
Public-private partnership initiatives addressing disaster-related issues	No	N/A
Other:		
Other:		
How can these capabilities be expanded and improved to reduce risk?		
Continue activities as notes above.		

Community resiliency can also be improved through advance planning for evacuation, sheltering, and temporary housing. NYS DHSES requires that all mitigation plans developed with state-administered funds identify these planning elements or refer to such components in existing local plans. Niagara County maintains a local Evacuation Annex to their Comprehensive Emergency

Management Plan, dated January 2014, and includes all cities, towns, and villages in the county.

The identified evacuation routes and sheltering locations for the Town of Lewiston are:

- Route 104, Robert Moses Pkwy
- Temporary shelter locations would be coordinated through activation of the county Evacuation Annex.

There are no identified potential sites for temporary housing in the Town. The County has identified temporary housing locations and the Evacuation Annex outlines the countywide plan for use of these locations.

11.6 Safe Growth and Future Development Trends

The mitigation mindset includes future planning and development. Mitigation is often cheaper and easier to manage on during growth and development planning phases versus retroactive, or post-incident, mitigation. The Team and each municipality completed a safe growth exercise to identify gaps in the community's growth guidance instruments to determine where vulnerabilities in future development can be reduced.

Plans developed with NYS DHSES-administered funds must document that proposed (or already implemented) projects will protect critical facilities to a 500-year flood event or the actual worst-damage scenario, whichever is greater. The Town of Lewiston has no proposed or implemented projects in the 500-year floodplain.

Table 11.6-1 identifies the areas where safe growth measures can be applied to future development.

Table 11.6-1
Safe Growth Audit for the Town of Lewiston

Comprehensive Plan		
Land Use	**Yes**	**No**
1. Does the future land-use map clearly identify natural hazard areas?	X	
2. Do the land-use policies discourage development or redevelopment within natural hazard areas?	X	
3. Does the plan provide adequate space for expected future growth in areas located outside natural hazard areas?	X	
Transportation	**Yes**	**No**
1. Does the transportation plan limit access to hazard areas?	X	
2. Is a transportation policy used to guide growth to safe locations?	X	
3. Are movement systems designed to function under disaster conditions (e.g., evacuation)?	X	
Environmental Management	**Yes**	**No**

1. Are environmental systems that protect development from hazards identified and mapped?	X	
2. Do environmental policies maintain and restore protective ecosystems?	X	
3. Do environmental policies provide incentives to development that is located outside protective ecosystems?	X	
Public Safety	**Yes**	**No**
1. Are the goals and policies of the comprehensive plan related to those of the FEMA Local Hazard Mitigation Plan?	X	
2. Is safety explicitly included in the plan's growth and development policies?	X	
3. Does the monitoring and implementation section of the plan cover safe growth objectives?	X	
Zoning Ordinance	**Yes**	**No**
1. Does the zoning ordinance conform to the comprehensive plan in terms of discouraging development or redevelopment within natural hazard areas?	X	
2. Does the ordinance contain natural hazard overlay zones that set conditions for land use within such zones?	X	
3. Do rezoning procedures recognize hazard areas as limits on zoning changes that allow greater intensity or density of use?	X	
4. Does the ordinance prohibit development within, or filling of, wetlands, floodways, and floodplains?	X	
Subdivision Regulations	**Yes**	**No**
1. Do the subdivision regulations restrict the subdivision of land within or adjacent to natural hazard areas?	X	
2. Do the regulations provide for conservation subdivisions or cluster subdivisions in order to conserve environmental resources?	X	
3. Do the regulations allow density transfers where hazard areas exist?	X	
Capital Improvement Program and Infrastructure Policies	**Yes**	**No**
1. Does the capital improvement program limit expenditures on projects that would encourage development in areas vulnerable to natural hazards?	X	
2. Do infrastructure policies limit extension of existing facilities and services that would encourage development in areas vulnerable to natural hazards?	X	
3. Does the capital improvement program provide funding for hazard mitigation projects identified in the Niagara County Hazard Mitigation Plan?	X	
Other	**Yes**	**No**
1. Do small area or corridor plans recognize the need to avoid or mitigation natural hazards?	X	
2. Does the building code contain provisions to strengthen or elevate construction to withstand hazard forces?	X	
3. Do economic development or redevelopment strategies include provisions for mitigating natural hazards?	X	
4. Is there an adopted evacuation and shelter plan to deal with emergencies from natural hazards?		X

11.7 Hazard Mitigation Programs and Projects

The success of future mitigation efforts in a community can be gauged by past efforts. Previously implemented mitigation measures indicate that there is, or has been in the past, some political desire to reduce the effects of natural, technological, or human-caused hazards on the community. Past success of these projects can also be influential in building support for new mitigation efforts. For the Plan, all identified hazards are addressed in the document, but it remains understood that only natural hazards are eligible for FEMA mitigation program funding.

Hazard Mitigation Grant Program Projects

The Federal Emergency Management Agency's Hazard Mitigation Grant Program (HMGP) provides competitive funding to states and local governments for the implementation of long-term hazard mitigation measures following a presidential disaster declaration. Grants are awarded to permanently reduce or eliminate future damages and losses from natural hazards. Each jurisdiction completing the capability assessment survey was asked for information regarding their HMGP projects. The information was collected, and the results are listed in Table 11.7-1.

Table 11.7-1
HMGP Projects in the Town of Lewiston

HMGP Project Description	Status
None noted	

Floodplain Management Programs – Participation and Compliance

The following subsection provides information on the local floodplain management programs in the Town of Lewiston. Additional specific information or floodplain assistance can be obtained from the local Floodplain Coordinator:

Tim Masters
tmasters@townoflewiston.us

Position status: Full time
Certified Floodplain Manager: No

The Town maintains NFIP participation and compliance through adoption and management of local zoning, subdivision, and floodplain ordinances, and through the application and maintenance of the local stormwater management plan. Additionally, the Town of Lewiston has adopted the 2010 Flood Insurance Rate Map (FIRM) which is used to assess flood hazard risk and set flood insurance rates. Table 11.7-2 shows a summary of flood insured properties in the Town. According to local and state records, there has been one recorded NFIP insurance claims totaling $556.00 in payments in this municipality.

Table 11.7-2
Summary of NFIP Policies
(February 18, 2014)

Policies In-force	Insurance In-force	Written Premium In-force
9	1,672,400	$9,650

Source: FEMA Community Information Service (CIS)

Table 11.7-3 provides details of the Town's FIRM effective dates and date of entry into the National Flood Insurance Program. The Town of Lewistion is a member of the NFIP in good standing, as of the development of this Plan. This means that they currently meet all requirements of membership in the NFIP, including adoption and enforcement of a flood damage prevention ordinance.

As of September 15, 2014, 1,498 communities in the State of New York participate in the NFIP. All 20 municipalities in Niagara County are part of that program. Only 39 communities in the state participate in the Community Rating System. The Town of Lewiston does not participate in the Community Rating Service (CRS) program.

Table 11.7-3
Floodplain Management Program Participation Information for the Town of Lewiston

Initial FHBM* Identified	Initial FIRM** Identified	Current Effective Map Date	Program Entry Date
04/12/74	06/18/80	09/17/10	06/18/80

Source: FEMA Community Status Book Report http://www.fema.gov/cis/NY.pdf
**Flood Hazard Boundary Map*
***Flood Insurance Rate Map*

Community Assistance Visits

The Town of Lewiston has no record of Community Assistance Visits.

Summary and Conclusions

The capability of the County and local governments varies greatly, but a goals toward overall higher capability are evident. One of the most significant survey findings is the existence of several planning programs and tools already in use across the planning area. However, many of the processes and tools do not incorporate hazard mitigation practices. Combining the findings in this Plan with local community development plans and ordinances will improve mitigation practices throughout the planning area. The maintained use of the following Mitigation Action Plan will also provide the vehicle to continued and improved mitigation capabilities. This will include a continued educational effort to clearly articulate the benefits of participating in and

sustaining the mitigation planning process through the Plan Implementation and Maintenance program.

11.8 Mitigation Action Plan

11.8.1 Interim Final Rule for Mitigation Action Plans

Requirement §201.6(c)(3): *[The plan **shall** include the following] a mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs, and resources, and its ability to expand on and improve these existing tools. This section **shall** include:*

Requirement §201.6(c)(3)(i): *A description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.*

Requirement §201.6(c)(3)(ii): *A section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure. All plans approved by FEMA after October 1, 2008 **must** also address the jurisdiction's participation in the NFIP, and continued compliance with NFIP requirements, as appropriate.*

Requirement: §201.6(c)(3)(iii): *An action plan describing how the actions identified in section (c)(3)(ii) will be prioritized, implemented, and administered by the local jurisdiction. Prioritization **shall** include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.*

Requirement §201.6(c)(3)(iv): *For multi-jurisdictional plans, there **must** be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.*

The purpose of this section is to describe Niagara County and the Town of Lewiston mitigation program goals and objectives.

11.8.2 Mitigation Action Planning Methodology

The Team has identified and prioritized goals, objectives, and actions based on hazard-specific information provided in this Plan. The methodology to determine priorities was based upon a consensus of the Team. Factors considered included benefit-cost effectiveness, and technical feasibility.

In order to evaluate potential actions, the participating jurisdiction representatives utilized the FEMA recommended mitigation planning criteria, which provides a systematic approach weighing the pros and cons of potential mitigation actions. The criteria encompasses evaluation of the following:

- **Life Safety** - How effectively will the action protect lives and prevent injuries?

- **Property Protection** - How significant will the action be at eliminating or reducing damage to structures and infrastructure?
- **Technical** - Is the mitigation action technically feasible? Is it a long-term solution? Eliminate actions that, from a technical standpoint, will not meet the goals.
- **Political** - Does the public support the mitigation action? Is there the political will to support it?
- **Legal** - Does the community have the authority to implement the action?
- **Environmental** - What are the potential environmental impacts of the action? Will it comply with environmental regulations?
- **Social** - Will the proposed action adversely affect one segment of the population? Will the action disrupt established neighborhoods, break up voting districts, or cause the relocation of lower income people?
- **Administrative** - Does the community have the personnel and administrative capabilities to implement the action and maintain it, or will outside help be necessary?
- **Local Champion** - Is there a strong advocate for the action or project among local departments and agencies who will support the action's implementation?
- **Other Community Objectives** - Does the action advance other community objectives, such as capital improvements, economic development, environmental quality, or open space preservation? Does it support the policies of the comprehensive plan?

Each of the mitigation actions was evaluated on the above-listed criteria and rated as follows:

0 = Not likely
1 = Neutral
2 = Likely

The overall score across all metrics was tallied and given a priority based on the following scoring matrix:

<8 = Low
8-12 = Moderate
>13 = High

The complete methodology and prioritization worksheet references are provided in Appendix G.

11.8.3 Mitigation Goals and Objectives

The Niagara County Comprehensive Plan vision was reviewed to understand the County's priorities. The vision, listed below, emphasizes cultural and environmental preservation while utilizing those assets to enhance economic development efforts.

The Niagara County Comprehensive Plan Vision Statement seeks the recognition of Niagara County as:

- A world class destination
- A center of national and international commerce
- A community that values its rich natural, heritage and cultural resources
- A great place to live and raise a family

Based on that vision, the Team decided on the following mitigation action goals and objectives:

1. To improve the safety and security of local residents, businesses and visitors by reducing the impact of natural hazards on life, safety, and property throughout the County, including economic and cascading impacts;

    - Objective 1.1—Reduce the risk of impacts from natural hazards through non-structural mitigation actions
    - Objective 1.2—Reduce the risk of impacts from natural hazards through structural mitigation actions

2. To improve the safety and security of local residents, businesses, and visitors by preventing or reducing the impact of human-caused hazards on life, safety, and property throughout the County, including economic and cascading impacts.

    - Objective 2.1—Reduce the risk of impacts from human-caused hazards through non-structural mitigation actions
    - Objective 2.2—Reduce the risk of impacts from human-caused hazards through structural mitigation actions

11.8.4 Mitigation Actions

Table 11.8.4-1 on the following pages lists the mitigation actions for the Town of Lewiston. Each mitigation action identifies the hazard it addresses, status of the project, responsibly party, target completion date, estimated cost, potential funding sources, action priority, benefit-cost, and technical feasibility.

Table 11.8.4-1
Mitigation Projects Proposed by the Town of Lewiston

(Additional Information about each action is located in the NYS Mitigation Action Worksheets; Appendix H, Section H.7)

Action #	Action Name	Action Description
TL-1	Drainage System Improvements	Improve or replace inadequate storm sewers in low-lying areas or the Town.
TL-2	Comprehensive Emergency Management Plan	Complete a comprehensive emergency management plan to include standard operating procedures for the most significant hazards impacting the municipality.
TL-3	Purchase Emergency Generators for Critical Facilities	Purchase of Emergency Generators for town buildings including the Town Hall, Town Highway Garage, Town Water and Sewer Building and Town Court Building

Action #	Action Name	Action Description
TL-4	Ditching Roadways	Continue annual ditching along town roadways and private lands.
TL-5	Public Safety/Public Works Interoperability Communications' System	Obtain public safety/public works interoperability communication system that includes portable communication and paging capabilities.
TL-6	Identify Existing Capabilities to Respond to Hazardous Materials	Identify and assess existing capabilities (and develop plan to build additional capabilities if necessary) to respond effectively to hazardous materials incidents.
TL-7	Identify Existing Capabilities for Response to Transportation Accidents	Identify and assess existing capabilities (and develop plan to build additional capabilities if necessary) to prevent and respond effectively to natural hazard related transportation accidents throughout the Town.
TL-8	Merge Inundation and Response Data	Work with NYPA to obtain and/or review the dam EAP and to merge inundation and response data into the CEMP.
TL-9	Educate Farmers on Soil and Water Conservation	Educate farmers on soil and water conservation practices.
TL-10	Capture and Maintain Level Data on Health and Epidemic Trends	Work with the local health department to capture and maintain municipal level data on health and epidemic trends.
TL-11	Improve Tree Trimming Practices	Encourage utility companies and property owners to improve tree trimming practices around power lines along easements
TL-12	GIS Mapping Programs	Map subsidence areas using GIS programs and restrict development in areas where soil is considered unsuitable.
TL-13	Educate Community on Use of Text Messaging During Emergencies	Encourage populations to use text messages during emergency events where people rely on mobile communications to reduce tasking the bandwidth of cellular towers.
TL-14	See something, Say something	Create a public awareness program to promote "See Something Say Something" in conjunction with Department of Homeland Security initiatives.
TL-15	Water Quality Testing	Conduct regularly scheduled water quality tests.
TL-16	Identify Potential Flood Zones	Work with NYPA on potential flood zones.
TL-17	Climate change research	Educate on possible climate change